South Carolina CLEAN MARINA

Guidebook 2010

Produced by the S.C. DHEC Office of Ocean and Coastal Resource Management
in cooperation with the South Carolina Marine Association

Revised 2010

The South Carolina Department of Health and Environmental Control's Office of Ocean and Coastal Resource Management (OCRM) has developed this guidebook with financial assistance awarded to OCRM by Section 310/Coastal Nonpoint Program of the Coastal Zone Management Act Award No. NA05NOS4191093 administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA). This project does not necessarily reflect the opinion or position of the funding organizations.

This manual is intended as an educational tool for marina/boatyard operators and boaters. It does not constitute a complete reference to State, Federal, or local laws. Relying on the information in this book will not protect you legally. This book may not be relied upon to create a right or benefit substantive or procedural, enforceable at law or in equity by any person.

OCRM, contributing agencies, organizations, and individuals cannot assume any liability for the accuracy or completeness of the information in this publication. Inclusion in this book is not an endorsement of the companies listed. Final determination of the proper handling and disposal of waste is the sole responsibility of the generator.

Cover photograph: South Carolina Clean Marina Flag, South Carolina Department of Health and Environmental Control/Office of Ocean and Coastal Resource Management.

For more information about OCRM's Clean Marina/Boatyard Program, please contact:
S.C. DHEC Office of Ocean and Coastal Resource Management
1362 McMillan Ave., Suite 400
Charleston, SC 29405
Phone: (843) 953-0200
Fax: (843) 953-0201
http://www.scdhec.gov/environment/ocrm/clean_marina.htm

South Carolina Clean Marina Participants

South Carolina Clean Marina Supporting Participants

Acknowledgements

The South Carolina Clean Marina/Boatyard Program and Guidebook were developed in close collaboration with the Clean Marina Stakeholders Committee. Sincere gratitude goes to the Committee for sharing their wealth of knowledge and expertise and for taking time out of their busy schedules.

- Clyde Buchanan, Hazardous Waste Compliance, SCDHEC-EQC
- Robin Mack, Underground Storage Tank Program, SCDHEC-EQC
- Kevin Godwin, Assessment/Emergency Response, SCDHEC-EQC
- Chris Staton, Assessment/Emergency Response, SCDHEC-EQC
- Jeff Herbig (no longer with the agency)
- Claire Prince, EQC Administration
- Marty Linder, Solid Waste Compliance, SCDHEC-EQC
- Susan Shingledecker, Environmental Program manager, BOATUS
- Wayne McFee, NOAA
- Rheta Geddings, SCDHEC Bureau of Water
- Gina Kirkland, Water Quality Certification, SCDHEC-EQC
- Wayne Stokes, Construction Permitting, SCDHEC-EQC
- Andy Yasinsac, Water Facilities Permitting, SCDHEC-EQC
- Sara Tuttle, SCDNR
- Chris Page, Aquatic Nuisance, SCDNR
- Suzi Durant, SC Marine Association
- Milton Hazel, Benchmark Marine
- Rocky Browder, SCDHEC-OCRM
- Marian Page, SCDHEC-OCRM
- Dan Burger, SCDHEC-OCRM
- Paul Lee, SCDHEC-EQC
- Wayne McFee, NOAA

Many thanks go to Susan Shingledecker, BoatUS Director of Environmental Programs, for sharing her expertise on Clean Marina programs. Gratitude also goes to Kristin Feindel, Clean Marina Program Coordinator for the Oregon State Marine Board and the Clean Marina program coordinators of many other states for sharing their program experience.

The structure and content of this guidebook and the SC Clean Marina/Boatyard Program rely heavily on the excellent past work of others, particularly the Oregon Clean Marina Program and the Connecticut Clean Marina Guidebook.

2010 Revision/update

- Curtis Joyner, SCDHEC-OCRM

Table of Contents

Introduction

This guidebook provides guidance to some environmentally friendly practices for marina/boatyard facilities. As the framework of the South Carolina Clean Marina/Boatyard Program, this guidebook outlines a suite of best management practices for marina facilities, and the process by which a facility can become a certified South Carolina Clean Marina/Boatyard.

Non-point source pollution

While point sources of pollution – those that come from a discrete point of discharge – remain a source of water quality degradation, it is non-point sources – pollution from diffuse sources – that have become the leading cause of water quality impairment in the United States (EPA, 2002). In general, non-point source pollution results from snow or rain runoff transporting pollution from farming, urban areas, forestry, construction, paved areas, mining sites, and other activities and areas to waterbodies.

Based on the 2001-2002 findings of the South Carolina Estuarine and Coastal Assessment Program' integrated water quality measurement, 73% of tidal creeks showed good water quality, 22% had fair water quality, and 5% had poor water quality. In contrast, 88% of the open water habitats had good water quality, 12% showed fair water quality and none had poor water quality (Van Dolah et al, 2004). The SCDHEC Shellfish Sanitation Program recently reported that "[t]he 2005 current report year levels of *Approved* acreage indicate a moderate decrease from that of 2004, while a similar moderate increase in *Restricted* acreage is observed. However, data review continues to indicate relative stability within all classification types throughout the 1986 - 2005 trend review period. Variations may occur on a yearly basis within any classification type. *Approved* and *Restricted* classifications are typically affected by rainfall runoff and river flow" (SCDHEC-BOW, 2006).

Non-point sources pollute marine environments by adding excess nutrients, sediments, and toxicants. Excess nutrients can cause weedy plant growth and algal blooms, which can lead to low dissolved oxygen, poor water clarity, and inhibition of aquatic plant growth. Toxicants can cause negative human and aquatic organism health effects. Excess sediments can lead to poor water clarity. Each of these effects results in a negative impact on aquatic organisms and the ecosystem in which they live – and therefore disrupt the environment that humans enjoy and depend on.

Why marinas/boatyards?

The congregation of recreational boats at marinas, the activities that often occur at marinas and boatyards, and the physical location of marinas and boatyards in and near the water can result in significant local impacts to water quality.

Because pollutants from upstream in the watershed often flow through the land and water of the marina, water quality at a marina is often a reflection of not only pollutants generated at the marina but also of pollutants resulting from several watershed sources. While this "offsite" pollution production is something to be acknowledged, the pollution generated from marina activities, marina and boatyard facilities, and the boats themselves must also be addressed.

Pollutants which are often generated at a marina and which could enter a marina basin include:

- Petroleum hydrocarbons from fuel, oil drippings, and from solvents
- Nutrients and pathogens from overboard sewage discharge and pet waste
- Toxic metal from anti-foulants and hull and boat maintenance debris
- Liquid and solid wastes from engine and hull maintenance and general marina activities
- Sediments from parking lot runoff and shoreline erosion
- Fish waste from dockside fish cleaning (EPA, 2001)

The input of pollutants from both marinas and from upstream in the watershed is exacerbated since most marinas are situated in areas protected from the wind and waves and where the currents are slower. These protected basins are often poorly flushed and therefore more susceptible to damage by pollutants.

What is the Clean Marina/Boatyard Program?

The goal of the South Carolina Clean Marina/Boatyard Program is to protect and improve local water quality of South Carolina waters by reducing pollution from marinas.

The South Carolina Clean Marina/Boatyard Program provides the opportunity for marinas, boatyards, and yacht clubs to receive recognition for helping to establish and promote a cleaner marine environment for South Carolina.

If a facility (which will be referred to as a marina throughout this guidebook) is in compliance with environmental regulations and uses a high percentage of the recommended practices, it can be designated as a South Carolina Clean Marina/Boatyard. Such certified marinas are authorized to fly the Clean Marina flag and use the logo in their advertising. The flag is a signal to boaters that a marina cares about the cleanliness of area waterways.

The South Carolina Clean Marina/Boatyard Program is part of a much larger effort to reduce non-point sources of pollution throughout the state in part to address the requirements of the Environmental Protection Agency and the National Oceanic and Atmospheric Administration under Section 319 of the 1987 amendments to the Clean Water Act and Section 6217 of the Federal Coastal Zone Act Reauthorization Amendments of 1990.

Why participate in the Clean Marina/Boatyard Program?

The South Carolina Clean Marina/Boatyard Program provides the opportunity to proactively maintain clean water for the benefit of your facility and future generations.

Ultimately, we feel the Clean Marina/Boatyard program will be good for your business. How?

Having a Clean Marina/Boatyard certification:

- Recognizes you for doing your part to protect water quality.
- May ensure your facility is in compliance with environmental regulations.
- Could encourage responsible boaters to patronize your establishment.
- Provides guidelines with which to educate your staff and patrons on effective best management practices.
- May make your marina more aesthetically attractive by reducing odor and visual impairments.
- Adds you to a published list of Clean Marina/Boatyard facilities and provides a link to your facility's website on the SCMA website (www.scmarine.org) and the DHEC-OCRM website (www.scdhec.gov/environment/clean_marina.htm)
- Could reduce pollution clean up costs.
- Makes you eligible for grant money and free technical assistance.
- Promotes your facility as eco-friendly.

How to Use this Guidebook

This guidebook is intended to be used as a reference manual. Refer to selected sections as needed for best management practice ideas and some pointers on legal requirements for various marina activities and facility management.

This guidebook is divided into the following sections:

- Boater Education
- Facility Management
- Hauling and Storing Boats
- Fueling
- Mechanical Activities
- Painting and Fiberglass Repair
- Emergency Planning

Each section first contains an explanation of the potential environmental impacts, then a basic outline of some of the environmental legal requirements, a description of best management practices, and lastly a list of other relevant sections in the guidebook.

The legal requirements described in this guidebook are only to help outline some of the major environmental laws and regulations that pertain to marinas and are not comprehensive. While the outlines can be used as guidance, compliance with laws and regulations can only be determined by the appropriate agency.

The best management practices in this guidebook may be used individually or in combination to reduce environmental impacts and to reduce the risk of illegal discharges of pollutants into the water.

The checklist used to determine South Carolina Clean Marina certification status references the sections and best management practices contained in this guidebook.

The appendices summarize some of the environmental federal and state laws and regulations that apply to marinas and boatyards. The appendices also include sample contract language and a list of contacts for more information.

How to Become a Certified South Carolina Clean Marina/Boatyard

A marina, boatyard, or yacht club must meet all the environmental legal and regulatory standards required by the state and federal government, and then employ a percentage of BMPs described in this document to become certified as a South Carolina Clean Marina. The criteria for certification are outlined in the checklist "South Carolina Clean Marina Award Checklist", which is included in the front flap of this guidebook.

To become a certified South Carolina Clean Marina, use the "South Carolina Clean Marina Award Checklist" and this *South Carolina Clean Marina Guidebook* as references to assess your facility. If you meet the requirements for certification, contact the South Carolina Clean Marina Program at the S.C. Marine Association (SCMA) at (843) 889-9067 or info@scmarine.org to schedule a confirmation visit. Representatives with the South Carolina Clean Marina Program will meet with you to verify the items checked on the "South Carolina Clean Marina Award Checklist." The Clean Marina Program consists of representatives with the SCMA, SCDNR, SCDHEC-OCRM, Clemson Extension, Palmetto Pride and the marina industry.

If you do not yet meet the minimum percentage of criteria on the checklist, you can still join the program with a Clean Marina Pledge. By signing the "South Carolina Clean Marina Pledge," located in the front flap of this guidebook, you commit to becoming certified within one year. Clean Marina staff and specialists are available to help answer questions as you work toward Clean Marina certification.

Once certified, you must confirm annually in writing that you continue to meet the award standards described on the "South Carolina Clean Marina Award Checklist." Every five years, or if there is a change in facility ownership, the Clean Marina coordinator will contact you to set up a meeting at a mutually convenient time to reaffirm your Clean Marina status.

List of Acronyms

ACOE	Army Corps of Engineers
APA	South Carolina Administrative Procedures Act
AST	Aboveground Storage Tank
BMP	Best Management Practice
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CVA	Clean Vessel Act
CWA	Clean Water Act
CZARA	Coastal Zone Act Reauthorization Amendments of 1990
DHEC	South Carolina Department of Health & Environmental Control
DHEC-OCRM	SCDHEC Office of Ocean and Coastal Resource Mgmt.
DNR	Department of Natural Resources
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
EQC	SCDHEC Environmental Quality Control
ESA	Endangered Species Act
FC	Federal Consistency
HAP	Hazardous Air Pollutant
MRRP	Monofilament Recovery and Recycling Program
MPPRCA	Marine Plastic Pollution Research and Control Act
MSD	Marine Sanitation Device
MSDS	Material Safety Data Sheet
ND	No Discharge
NFPA	National Fire Protection Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NWP	Nation Wide Permit
ODC	Ozone Depleting Chemical
OSHA	Occupational Safety and Health Administration
RCRA	Resource Conservation and Recovery Act
SCMA	South Carolina Marine Association
SCNW	South Carolina Navigable Waters
SPCC	Spill Prevention, Control, and Countermeasure
USC	United States Code
USCG	United States Coast Guard
UST	Underground Storage Tank
VOC	Volatile Organic Compound
TMDL	Total Maximum Daily Load

General Guidance: In or Out of the Water?

These lists can be used as a general guideline for whether a vessel should be taken out of the water or not for vessel repair and maintenance activities. Please see the sections in this guidebook for the regulations and best management practices for individual activities and substances.

May be conducted <u>on board</u> a vessel while it is in the water:

- Routine engine tune-ups, oil changes, and other minor servicing and repair.
- Routine care and cleaning of rigging and fittings, interior surfaces, and "bright work," providing these activities do not produce a wastewater.
- Painting/varnishing interior surfaces and bright work.
- Routine sanitary pump-outs and maintenance of sanitary wastewater facilities.
- Bilge pump repair.
- Removal and replacement of an engine, when all discharges or spills of engine fluids are contained.
- Similar activities where an accidental spill can be contained on deck or within the vessel.

Should be conducted with the vessel <u>out of the water</u>:

(And within an area designed for that purpose, if the likelihood exists that pollutants may be released into the environment.)

- Repairs requiring the disassembly of the outboard or lower drive units.
- Bilge repairs requiring opening or penetrating the hull.
- Scraping, sandblasting, or painting the hull exterior or drive units.
- Interior or on-deck painting or similar activity involving aerosol application with a risk of over-spray or drip beyond the confines of the vessel.
- Hull exterior cleaning with agents other than non-chlorinated fresh water or natural seawater. Wastewater from such cleaning should be collected and treated, or discharged into a community sewerage system (permission may be required). Discharge of wash water into waters of the state is prohibited.
- Any other activities involving the potential risk of an unconfined discharge of oil, chemical, nutrients, or other contaminants to waters of the state.

Boater Education, Employee Training, & Signage

Potential Environmental Impacts:

The environmental choices that marina customers and employees make can improve the water quality in your marina basin, and the appearance of your facility.

Legal Requirements:

None	❑ There are no legal requirements regarding boater education.

Best Management Practices:

Provide clear signage: *Waste facilities* *Storm drains*	❑ Post clear advisory and warning signs in appropriate locations at your marina. Sample signs are shown on the next pages. Signs should be made of durable material suitable for withstanding the marine environment. ❑ Ensure the following are clearly marked: 1. Solid waste disposal facilities 2. Recycling facilities 3. Used oil receptacles 4. Sanitary pumpout stations ❑ Storm drain catch basins should be marked to advise marina users not to discharge waste oils or other pollutants into the storm drain system.
Incorporate BMPs into marina rules and user contracts	❑ Write specific best management practices into user contracts and marina rules. Marina rules should be incorporated into user contracts, where approved methods and means of enforcement should be clearly described. Requiring observation of the rules as a term of tenancy should make them enforceable. See sample contract language in Appendix G. ❑ Communicate that these rules are important for everyone, and important for the protection of boaters and the marine environment. ❑ These rules should: 1. Identify all user responsibilities for each BMP adopted by the marina. 2. Designate activities prohibited at the marina. 3. Clearly designate areas for restricted activities (e.g., painting and scraping, or waste handling). 4. Designate activities restricted to performance by authorized personnel. 5. Outline procedures to address spills and provide emergency contact phone numbers. A specific contingency plan does not necessarily need to be detailed in a marina's rules, but the existence of the plan and where it can be accessed should be communicated.

Train employees	❑ Train employees about clean boating practices. ❑ Employees should receive specialized training for environmentally sensitive activities, such as: 1. Fuel handling 2. Waste handling 3. Proper use of toxic material, including cleaning agents and paints ❑ Only trained personnel should perform the environmentally sensitive activities listed above. ❑ Let them know what information is available to distribute to customers.
Distribute Clean Boater Tip sheets	❑ Photocopy and distribute Clean Boater tip sheets to your customers. The Clean Boater Tip sheets can be found in Appendix I. ❑ Contact OCRM/SCDNR for additional boater education materials to distribute to marina customers.
Inform contractors	❑ Inform independent contractors of specific operational BMPs used at the facility through orientation and training. ❑ Required BMP measures for contracted work should be incorporated into contracts and specifications.
Provide environmental information	❑ Post required BMP measures and emergency phone numbers in all applicable work areas. ❑ Host an environmental workshop for customers. ❑ Include environmental information in facility newsletters. ❑ Include environmental boating practices in slip contracts. ❑ Provide a list of "yard rules" to your customers who do their own boat maintenance.

Related Sections and Appendices:

⇒ Sample signs (on following pages).
⇒ Appendix G for Sample Contract Language.
⇒ Appendix I for Boater Tip Sheets.

NOTICE

The Federal Water Pollution Control Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States or the waters of the contiguous zone if such discharge causes a film or sheen upon, or discoloration of, the surface water. Violators are subject to a penalty of $5,000.

The use of soaps to disperse oil is illegal. Violators may be fined up to $25,000 per incident.

Report Oil Spills to
USCG at (800) 424-8802

Pumpout Station

- [Instructions for use]
- [Hours of operation]
- [Fee]
- [Name and number of person to call in case of malfunction]

DO NOT DISCHARGE SEWAGE

Please use our clean, comfortable restrooms while you are in port.

Nutrients and pathogens in sewage impair water quality.

OIL SPILL RESPONSE

[Name and Number of person to contact in marina in case of a spill]

Vessel Maintenance Area

- Perform all major repairs in this area.
- Do all blasting and spray painting within an enclosed booth or under tarps.
- Use tarps to or filter fabric to collect paint chips and other debris.
- Use vacuum sander (include rental information if available)
- Use high-volume, low-pressure spray guns (include rental information if available)
- Use drip pans with all liquids
- Reuse solvents
- Store waste solvents, rags and paints in covered containers.

Illicit Discharges

It is against both Federal and State Laws to discharge raw, untreated sewage of any description of watercraft into the waters of the State.

Recycle Antifreeze

THIS CONTAINER IS FOR:

- Ethylene glycol antifreeze
- Propylene glycol antifreeze

[Tailor to fit your hauler's requirements.]

Gasoline, diesel, kerosene and all other materials are STRICTLY PROHIBITED

[If container is kept locked, include information about where to find the key or leave the antifreeze]

KEEP FUEL OUT OF WATER

Do Not Top Off Tank
Listen to Anticipate When Tank is Full
Wipe-up Spill Immediately

RECYCLE OIL

THIS CONTAINER IS FOR:

- Engine oil
- Transmission fluid
- Hydraulic fluid
- Gear oil
- #2 Diesel
- Kerosene

Gasoline is STRICTLY PROHIBITED

[Tailor to fit your hauler's requirements]

[If container is kept locked, include information about where to find the key or leave the oil]

RECYCLE

Oil	Mixed Paper
Antifreeze	Newspaper
Lead Batteries	Solvents
Glass	Steel
Plastic	Scrap Metal
Aluminum	Tin
Corrugated cardboard	Tires

Metal fuel filter canisters

[Include which items you recycle and where the collection sites are located.]

[Include information about local recycling services for materials that you do not collect.]

Think Before You Throw Away

The following items may not be placed in this dumpster:

- Oil
- Antifreeze
- Paint or Varnish
- Solvents
- Pesticides
- Lead batteries
- Transmission fluid
- Distress flares
- Hazardous Waste
- Ask marina staff about proper disposal of these items

No Fish Scraps

Please do not discard fish scraps within the marina basin.

- Use our fish cleaning station.
- Bag the scraps and dispose in dumpster or at home.
- Freeze and reuse scraps as chum or bait.
- Save and dispose over deep water.

Keep It Clean

This marina provides food and shelter for young fish

- Prevent oil spills!
- Keep bilge clean!
- Use oil sorb pads!
- Recycle or properly dispose of oil, antifreeze, solvents, cleaners, plastics and other wastes.

Thank You for Keeping the (Sound, Lake, River) Clean and Safe!

Environmental Policy

It is the policy of this marina to protect the health of our patrons, staff and the environment by minimizing the discharge of pollutants to the water and air.

Fixed and Floating Structures

Potential Environmental Impacts:

As materials degrade or leach contaminants, marina structures themselves may introduce pollutants to the marine environment. Maintenance of these structures can also be a source of pollution. Selection of suitable repair or replacement materials and thoughtful maintenance practices will help reduce this pollution.

Legal Requirements:

Encapsulate foam floats	❑ All polystyrene or whitebeard foam placed in the water after January 1, 1992, must be encapsulated with concrete, wood, galvanized steel, plastic or fiberglass. A permit for installation is required from the SCDHEC-OCRM.
OCRM dredge, fill, and construction permits	❑ Dredging, the erection of structures, and the placement of fill, and work incidental thereto, on submerged and submersible land are regulated by the SCDHEC-OCRM. It is necessary to obtain all required authorizations from OCRM prior to conducting work such as dredging (including maintenance dredging), construction or placement of new docks, pilings, ramps, floats, piers, travel lift wells, seawalls, bulkheads, rip rap, stormwater outfall pipes, and/or mooring fields waterward of the high tide line in the tidal, coastal, or navigable waters of the state.
ACOE dredge, fill, and construction permits	❑ The U.S. Army Corps of Engineers (ACOE) has jurisdiction over the above-listed activities in tidal, coastal, or navigable waters as well, pursuant to Section 10 of the Rivers and Harbors Act of 1899 [33 USC §401 et seq.], and Section 404 of the Clean Water Act [33 USC §1344 et seq.]. Call the ACOE at (866)-329-8187.

Best Management Practices:

Routine maintenance	❑ Keep all docks, floats, and bulkheads in good working order by conducting routine maintenance.
Avoid creosote timber	❑ For construction and replacement of timber, use timber that has been pressure treated with a preservative such as chromated copper arsenate (CCA) instead of creosote-treated materials. Creosote contains PAHs, which can cause cancers in human and are harmful to fish and other aquatic life.
Use concrete or recycled pilings	❑ For use below the water, concrete pilings or other materials (e.g., plastic, recycled materials) with degradation times greater than 10 years are encouraged.
Shoreline stabilization: Vegetation Riprap	❑ Use natural vegetation for shoreline stabilization whenever feasible. Maintain this cover in good condition by prompt repair and reseeding of washouts and other losses of vegetation. ❑ If natural vegetation is not a feasible option, riprap revetments are generally encouraged over vertical bulkheads, because sloping riprapped embankments provide greater habitat and reduce wave reflections.

Scrape, sand, and paint wisely	❑ Conduct scraping, sanding, painting, and sandblasting of in-water and landside structures using the same management principles recommended for vessels. ❑ Where feasible, floating structures should be removed to shoreline facilities for scraping, painting, and major repairs.
Eliminate zinc discharges	❑ Galvanized structures release high levels of zinc. Consider using other materials or coat-galvanized areas with epoxy to reduce or eliminate highly concentrated zinc discharges.
Chose alternatives to whitebeard foam	❑ Use closed cell foam or alternate flotation methods rather than expanded polystyrene or whitebeard foam. Whitebeard foam harms birds and fish that mistake it for food and degrades water quality.
Used whitebead foam disposal	❑ Reuse whitebeard foam only if it is properly encapsulated. ❑ Used whitebeard foam should be recycled where facilities exist. ❑ If neither option is appropriate, used foam must be disposed of at an appropriate upland disposal site.
Marina expansion	❑ Design all marina expansions to minimize adverse impacts on basin flushing, water quality, and adjacent coastal resources including shellfish beds, wetlands, and submerged aquatic vegetation.
Permit records	❑ Keep copies of all coastal permits in an easily accessible file. As management changes, pass on the information about coastal permits to the incoming marina manager.
Contact OCRM	❑ Before doing ANY work that you think might be in the state's permitting jurisdiction, contact the SCDHEC-OCRM to discuss the work that you would like to do or to schedule a pre-application meeting. Some of the maintenance work you want to do may not require any prior authorization or may be eligible for a shortened permit process.

Relevant Sections and Appendices:

⇒ Abrasive Blasting section.
⇒ Paint Spraying section.
⇒ Paint Stripping section.
⇒ Scraping and Sanding section.

Stormwater Runoff Management Practices

Potential Environmental Impacts:

Stormwater runoff from parking lots and other developed surfaces represents a significant mode of pollutant transport from land-based activities to receiving water bodies. The runoff from parking areas, buildings, repair yards, and access roads can carry nutrients, metals, suspended solids, hydrocarbons and other potential pollutants into marina basins. The highest concentration of these surface pollutants occurs in the runoff associated with the first half to one inch of rainfall depending on storm intensity. Stormwater that is treated in some way to remove pollutants before it reaches the marina basin reduces the impact to aquatic and marine life.

Legal Requirements:

Stormwater discharge permit	❑ Any marina or boatyard that performs boat construction or rebuilding and has a defined stormwater outfall needs a stormwater permit [40 CFR 122; DHEC R.61-9.122} ❑ Under the permit, marina operators must develop a stormwater pollution prevention plan and implement best management practices to ensure that stormwater leaving the marina property will not harm the quality of the surrounding waters. ❑ For additional information, contact your local SCDHEC-OCRM.
Dredge and Fill Permits	❑ Wetland construction or enhancement may require ACOE and SCDHEC-OCRM permits [CWA §401; SCDHEC R.30-12(G).

"Good Housekeeping" Best Management Practices:

Enclose and designate work area	❑ Perform as much boat repair and maintenance as practicable inside work buildings. ❑ Where an inside workspace is not available, perform abrasive blasting and sanding within spray booths or tarp enclosures. ❑ Where buildings or enclosed areas are not available, provide clearly designated land areas as far from the water's edge as possible for debris-producing maintenance. Collect maintenance debris on tarps, filter fabric, or paved surface.
Use vacuum sanders	❑ Use vacuum sanders to collect dust and chips while removing paint from hulls.
Establish "yard rules"	❑ Establish a list of "yard rules" which do-it-yourselfers and contractors must follow when performing debris-producing boat maintenance.
Clean and sweep areas immediately	❑ Clean hull maintenance areas immediately after any maintenance is done to remove debris, and dispose of collected material properly. ❑ Sweep or vacuum around hull maintenance areas, parking lots, and driveways frequently, where appropriate.
Capture runoff	❑ Capture pollutants out of runoff water with permeable tarps, screens, and filter cloths.
Cover pollutants	❑ Store all potential pollutants such as pesticides, used oil containers, detergents, etc. under cover.

Structural Best Management Practices:

Vegetated buffer	❑ Plant a vegetated filter strip or buffer between impervious areas and the marina basin. A vegetated filter strip is a densely vegetated strip of land engineered to accept runoff from upstream development as overland sheet flow.
Wetlands	❑ Construct new or restore former wetlands where feasible and practical. Constructed stormwater wetlands are manmade shallow pools that create growing conditions suitable for wetland vegetation. Contact ACOE and SCDHEC-OCRM regarding permits for wetland construction or restoration
Minimize impervious surfaces	❑ Minimize impervious areas on marina site by paving only where absolutely necessary. Use porous pavement for parking lots and lightly traveled access roads, or other pervious materials such as gravel or crushed concrete.
Roof runoff	❑ Direct roof runoff to drywells or position downspouts so that they drain to vegetated areas. Avoid draining to concrete or asphalt. Contact SCDHEC about drywell construction and Underground Injection Control regulations.
Oil/grit separators	❑ Install oil/grit separators to capture pollutants in runoff. Water from parking lots and other areas likely to have hydrocarbons should be directed through oil/grit separators before entering any other management structure. (Note: this practice requires a lot of maintenance.)
Sand filters	❑ Install sand filters. Intermittent sand filter facilities are underground vault-like facilities that capture, pre-treat, and filter the first flush of stormwater runoff. In some cases these facilities can include an aboveground storage facility to store the excess volume of runoff from larger storms. Contact DEQ about Underground Injection Control regulations.
Catch basins	❑ Use catch basins with deep sumps where stormwater flows to the marina basin in large pulses. ❑ Maintain catch basins regularly. Typical maintenance of catch basins includes trash removal if a screen or other debris-capturing device is used, and removal of sediment by a hired contractor or on-site wet-vacuum system. At a minimum, catch basins should be cleaned at the beginning and end of each boating season.
Maintain sediment traps	❑ All sediment traps and oil/water separators in the stormwater drainage system should be: 1. Inspected on a monthly basis and after each storm event. 2. Cleaned as necessary to ensure the interception and retention of oils and solids entering the drainage system. 3. Cleaned immediately when the unit exceeds 50% stored sediment capacity. ❑ Inspect sediment and grit traps associated with pressure washing after every use to insure that the unit is capturing the solids. ❑ Remove oily sheen with a skimming device or absorbent pads. This oil may be managed as used oil.
Storm drain filters	❑ Add filters to storm drains that are located near work areas to screen solid materials out of runoff.
Drain inlets	❑ Place absorbent materials in drain inlets to capture oil and grease.

Relevant Sections and Appendices:

⇒ See Appendix F for stormwater general permit information.

Sewage Disposal

Potential Environmental Impacts:

Generally, marina basins are naturally sheltered and semi-enclosed, which usually means they are not flushed as well as more open waters. Bacteria, chemicals, and nutrients contained in untreated and minimally treated human waste from boats can overload small, poorly flushed waterways and may cause local water quality problems. Disease carrying bacteria, viruses and protozoa can enter waterways through the discharge of untreated or poorly treated boat waste. The nutrients in boat sewage can stimulate algae to grow in such large numbers that their decomposition uses up oxygen necessary for fish to live. Direct threats to human health can arise through consumption of contaminated water, fish, or shellfish. Boat sewage waste is much more concentrated than other domestic waste. Scientists have shown there are more bacteria in the untreated waste discharged by one boat than in the treated wastewater discharged by a city of 10,000 people.

Legal Requirements:

Sewage dumping restrictions	❑ Discharge of any untreated black water from a boat or vessel in freshwater lakes or reservoirs is prohibited [40 CFR 140.] ❑ S.C. regulations prohibit discharges from marine sanitation devices in freshwater lakes, reservoirs, and flowing streams only in No-Discharge Zones, as designated by U.S. EPA, based on the availability of pumpout facilities. For more information, see the Guide to Marine Sewage Disposal Stations in Coastal South Carolina on SCDNR's website at www.dnr.sc.gov/cleanvesselstationmaps.html
Pumpout construction permits	❑ "Standards for Wastewater Facility Construction" require that any wastewater facilities, such as sewer, pump station, treatment facility, and pumpout system be permitted [SC R.61-67].
Floating buildings sewage connection	❑ For floating buildings, a continuous connection to a SCDHEC-approved sewage system is required for human sewage and gray water (water from sinks, showers, and other fixtures that may release detergents, soaps, oils, and other contaminants into the water.
Live-a-board and houseboats	❑ It is unlawful for a person to operate or float a houseboat on the freshwaters of this State having a marine toilet unless it discharges only into a holding tank [SC R.48-1-85].
New marinas	❑ New or proposed marinas must provide facilities for the proper handling of petroleum products, sewage, litter, waste, and other refuse in accordance with Department regulations. [SCDHEC-OCRM R.30-12(E)(1)(t)].

Best Management Practices:

Arrange for disposal	❑ Marina operators should arrange for sewage disposal and specify to tenants how wastewater is to be handled at the marina.
Sewage collection devices: Pumpout Dump station	❑ Provide a means to collect and properly dispose of all black water generated from boats. 1. If your marina services boats with holding tanks, install a pumpout. Select the type of pumpout system that meets the needs of your marina, your customers, and transients. Options include pumpouts: a. Permanently fixed to the dock, b. Mobile, hand truck, trailer mounted units, or c. Pumpout boat 2. If your marina services mostly smaller boats without holding tanks, install a portable toilet holding tank waste receptacle (dump station) in a convenient location near small slips and launch ramps.
Use CVA funds	❑ Use Clean Vessel Act (CVA) funds to greatly defray costs of installing and operating a pumpout. Contact SCDNR for more information.
# of collection devices	❑ Determine the number of waste collection devices necessary for the number of boats at your marina and then install any more devices needed.
Pumpout locations	❑ If the pumpout is permanently fixed, choose an appropriate location that is convenient and accessible to the most number of boats throughout the tidal cycle. Consider whether a gas dock, T-head, or separate bulkhead is most appropriate.
Train staff	❑ Train staff to operate the pumpout. Boaters rely on functional pumpout facilities.
Upland holding tanks	❑ Upland waste holding tanks, if above ground, should be secured and have a secondary containment area, including a concrete pad. Inspect area regularly.
Bathrooms	❑ Provide clean and attractive bathrooms for marina customers. Encourage customers to use them rather than the toilets on their boats. ❑ The number of restrooms, shower, and washing facilities should be determined according to state or local building code requirements
Prohibit discharge	❑ Prohibit discharge of treated or untreated human waste within the marina basin. Incorporate the prohibition into customers' slip contract. This would prohibit boaters from discharging any sewage into the marina basin. For this to work, there must be adequate pumpout services, customers must be educated about how to manage their boat waste, and there must be strict enforcement. ❑ Support adoption of a federally designated "No Discharge Area" in your region, based on adequate availability of pumpout stations.
Educate boaters	❑ Educate marina customers about the impacts of boat sewage and the proper way to manage it. ❑ Post signs in the marina outlining the rules for proper sewage handling. ❑ Encourage the boaters at your facility with marine heads to install holding tanks.
Alternative deodorants	❑ Provide and promote biodegradable and non-toxic holding tank deodorant. Sell it in the ships store.
Pumpout boats	❑ Allow pumpout boats to service customers in your facility.

Relevant Sections and Appendices:

⇒ See Appendix D for boat sewage collection device information.

Spills

Potential Environmental Impacts:

Careless engine maintenance, refueling habits, and improper disposal of oil and contaminated bilge water release more oil into marine water each year than did the Exxon Valdez spill. According to the EPA, the hydrocarbons in oil harm juvenile fish, upset fish reproduction, and interfere with the growth and reproduction of bottom-dwelling organisms. These little spills and larger spills at the marina should be curtailed before they become spills by using best management practices. The impacts of spills that do occur can be minimized through preparation and efficient response.

Legal Requirements:

SPCC Plan	❑ If your facility stores a certain amount of gas, oil, diesel, or kerosene, it may require a Spill Prevention Control and Countermeasure (SPCC) Plan [40 CFR 112].
Report spills	❑ Any spill or release of petroleum that results in a sheen on the waters of the state must be reported immediately to the: 1. SCDHEC at its 24 hour emergency hotline as listed in the Appendix 2. National Response Center [Section 311 of the Clean Water Act; 33 USC 1321].
Hazardous waste	❑ A hazardous waste determination must be conducted for any materials used to clean a spill to establish whether or not disposal of the materials is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11].

Best Management Practices:

Spill materials	❑ Store spill containment and control materials in a clearly marked and easily accessible location. This locker or cabinet should contain: 1. absorbent pads 2. absorbent booms (length =/> 3x the length of longest vessel in marina) 3. empty sand bags 4. sewer pipe plugs 5. dry absorbent 6. square end shovels 7. pry bar 8. curtain boom (have enough to boom off a significant release) 9. drain covers 10. fire extinguishers 11. copy of spill contingency plan
Fuel dock	❑ Keep oil absorbent pads and pillows available at the fuel dock for staff and customers to mop up drips and small spills.
Respond immediately	❑ If a spill occurs, cleanup efforts should commence immediately, taking precedence over normal work.

If spilled on water	❑ If you have an oil, gas, or diesel spill on water: **1. Stop the flow.** **2. Contain the spill.** a. Deploy containment booms to minimize the threat of a release to water or to minimize spread if the spill has reached the water. **3. Call:** a. SCDHEC at and b. The U.S. Coast Guard's National Response Center.
If spilled on land	❑ If a spill occurs on land, cover the spill with absorbent material such as kitty litter, sawdust, or oil absorbent pads. Do not use straw.
Waste disposal	❑ Properly characterize the cleanup waste and dispose of it to a facility authorized to handle that type of waste.
Sell devices in store	❑ Carry vent line whistles, oil absorbent fuel collars, air/fuel separators, and other fuel spill preventative devices in your ships store.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix E for spill plan information and your role in spill response.
⇒ Emergency Planning section.
⇒ Rags and Oil Absorbent Pads section for disposal of cleanup materials.

Litter and Recycling

Potential Environmental Impacts:

Routine marina and boating activities produce a variety of non-hazardous solid wastes. These include bottles, plastic bags, aluminum cans, coffee cups, six-pack rings, disposable diapers, wrapping paper, cigarette filters, and fishing line. This type of debris harms living organisms and their habitats after it enters the water. A litter free facility is more attractive to present and potential customers. Diverting reusable materials out of the waste stream through recycling conserves natural resources, and reduces the amount of waste that must be disposed.

Legal Requirements:

Provide trash barrels	❑ Marina operators must provide areas to collect solid waste from their customers [33 USC 1905(a)(2), 33 CFR 151.05].
No littering	❑ Polluting wastes may not be discharged into the waters of the state or placed in a location where it is likely to end up in the waters of the state, except when in compliance with a permit. [SC Code 48-1-90(a)]. ❑ No one may dispose of garbage except at a permitted disposal site such as a dump station [SC Code 16-11-700(a)(2)].
No burning prohibited materials	❑ Open burning is prohibited, except in certain circumstances [DHEC R.61-62.2].

Best Management Practices:

Trash receptacle location	❑ Place covered trash receptacles in convenient locations away from the water for use by marina patrons. ❑ Do not put trash or recycling containers on docks, as waste can easily blow into the water. ❑ If trash or recycling containers must be put near water, secure them so they do not topple.
Post signs	❑ Post signs directing patrons to trash receptacles and recycling areas. Signs should clearly spell out rules and note any prohibited wastes.
Lock receptacles at night	❑ If practical, lock trash receptacles at night to prevent "midnight dumping" since marina operators are responsible for the content of dumpsters.
Pick up trash regularly	❑ Train employees to pick up stray trash as a daily practice.
Encourage leftover exchange	❑ Encourage boaters to exchange excess paints, thinners, and varnishes rather than dispose. Provide a bulletin board where boaters can post notices if they have or need a particular substance, or establish a paint and maintenance chemical swap area for customers.
Recycle:	❑ Recycle: 1. Glass 2. Metal food containers 3. Aluminum cans 4. Plastics 5. Cardboard 6. Storage batteries 7. Newspaper 8. Scrap metal

Clearly mark recycling containers Educate employees Cooperate locally	❑ Provide clearly marked, conveniently located recycling containers for customers and staff to use, particularly for plastic, glass and metal food/beverage containers, cardboard, and other recyclables generated at your facility. ❑ Educate employees about separation requirements and your recycling program. ❑ Consider cooperating with other nearby businesses to simplify recycling and reduce costs. Your municipal recycling coordinator may be able to help you find or establish a cooperative business-recycling program.
Purchase recycled products	❑ Purchase products made with recycled contents to close the recycling loop (i.e., create a market for the materials you recycle). Buy recycled printing and writing paper, towels, tissue, re-refined motor oil and antifreeze.
Reuse empty drums	❑ Reuse or recycle empty drums and containers rather than disposing them. ❑ If not recycled, drums should be emptied and flattened according to local landfill specs. Residues from the drum should be collected and managed properly.
Pet waste	❑ Require patrons to clean up after their pets.

Relevant Sections and Appendices:

⇒ Appendix B for preferred disposal options for potential hazardous waste streams.
⇒ Antifreeze section for disposal options.
⇒ Battery Replacement section for disposal options.
⇒ Boater Education sample signs section.
⇒ Pet Waste section.

Facility Cleaning

Potential Environmental Impacts:

Many common cleaning products contain hazardous chemicals that with repeated or excessive contact may lead to lung problems, brain and nerve damage, cancer and even death. Hazardous chemicals can often be found in drain cleaners, floor-care products, window sprays, and bathroom cleaners. These products can enter the water and poison marine life. For example, degreasers dry the natural oils fish need for their gills to take in oxygen. Phosphates can cause excessive algae growth and lead to the depletion of oxygen in the water. Other cleaning agents can cause death, cancer, and other harm to aquatic organisms.

Cleaning products labeled "DANGER" or "POISON" are typically most hazardous. Others may be labeled "CAUTION" or "WARNING" because they are skin or eye irritants. Less hazardous alternatives for common cleaning products are often labeled "non toxic."

Legal Requirements:

Hazardous waste	❑ There are no legal requirements to use environmentally preferable products. Note that waste-cleaning products must be disposed of in accordance with the hazardous waste disposal requirement.

Best Management Practices:

<table>
<tr><td rowspan="2">Avoid these ingredients</td><td colspan="3">❑ Read product labels. Avoid cleaning products with:</td></tr>
<tr><td>O alcohol
O ammonia
O bleach
O butyl cellosolve
O cresol
O dye
O ethanol</td><td>O formaldehyde
O glycols
O hydrochloric acid
O hydrofluoric acid
O lye
O naphthalene
O PDCBs (paradichlorobenzenes)</td><td>O perchloroethylene
O petroleum distillates
O phenol
O phosphoric acid
O propellants
O sulfuric acid
O TCE (trichloroethylene)</td></tr>
<tr><td>Clean more often with less</td><td colspan="3">❑ Depending on the cleaning job, always try cleaning with water and a coarse cloth first. Clean more often with fresh water only. If you must use a cleaner, use the product sparingly.</td></tr>
<tr><td>Use alternative products</td><td colspan="3">❑ Consider non-toxic alternatives for cleaning products. Even non-toxic substances can cause temporary harm to the environment and should therefore be used sparingly.
❑ Some non-toxic alternatives to typical cleaning products are listed in the table on the next page.</td></tr>
</table>

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management.

Alternatives to Toxic Products

Toxic Product	Alternative
All Purpose Cleaner	Mix one cup white vinegar with two gallons water.
Air Freshener	Leave out an open box of baking soda.
Aluminum Cleaner	2 Tablespoons cream of tartar in 1 qt. hot water
Ammonia-Based Cleaners	Vinegar, salt, and water.
Bleach	Borax or hydrogen peroxide
Brass Cleaner	Worcestershire sauce. Or paste made of equal parts of salt, vinegar, and water.
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish.
Copper Cleaner	Lemon juice and water. Or paste of lemon juice, salt, and flour.
Drain Opener	Disassemble and replace or use plumber's snake. Or flush with boiling water + 1/4 cup baking soda + 1/4 cup vinegar.
Fiberglass Stain Remover	Baking soda paste.
Floor Cleaner	One cup white vinegar in 2 gallons water.
General Cleaner	Baking soda and vinegar. Or lemon juice combined with borax paste.
Hand Cleaner	Baby oil or margarine.
Head Cleaner	Put in baking soda and use a brush.
Mildew Remover	Paste using equal parts of lemon juice and salt or white vinegar and salt.
Rug/Upholstery Cleaner	Sprinkle on dry cornstarch and then vacuum.
Scouring Powders	Baking soda or salt. Or rub area with one-half lemon dipped in borax, then rinse.
Shower Cleaner	Wet surface, sprinkle with baking soda, rub with scouring cloth.
Stainless Steel Cleaner	Baking soda or mineral oil for polishing, vinegar to remove spots.
Toilet Bowl Cleaner	Use toilet brush and baking soda.
Varnish Cleaner	Wipe with 1/2 cup vinegar and 1/2 cup water solution
Window Cleaner	Mix two tablespoons vinegar in one quart of water or rub glass with newspaper.
Wood Polish	3 parts olive oil and 1 part white vinegar (for interior unvarnished wood only).

Landscaping

Potential Environmental Impacts:

Excess pesticides and fertilizer that you put on your lawn and plantings can eventually run off into the marina basin and harm marine and aquatic life. Landscaping techniques can be used to reduce environmental impacts on marina basins and can save money by requiring less water and maintenance, while creating an attractive location for customers.

Legal Requirements:

Hazardous waste determination	❑ Before disposing of old or unused lawn additives, particularly pesticides, conduct a hazardous waste determination to establish whether or not their disposal is subject to hazardous waste regulations [DHEC R.61-79.262.11].

Best Management Practices:

Avoid invasive plants	❑ Avoid planting invasive species. Invasive species multiply rapidly and take over areas very quickly.
Use native plants	❑ Use native plants for landscaping. Plants that are native to the region and climate compete well with weeds and other pests. They also require less fertilizer and pest control than non-native plants. Native plants can be purchased at your local nursery. ❑ For listings of native plants good for landscaping, read Back Yard Buffers: www.clemson.edu/extension
Plant vegetated buffer	❑ Plant a vegetated filter strip or buffer between impervious areas and the marina basin. A vegetated filter strip is a densely vegetated strip of land engineered to accept runoff from upstream development as overland sheet flow.
Save water	❑ Save water by watering in the early morning or late afternoon. Oscillating sprinklers can lose up to 50% of water to evaporation on hot days.
Minimize fertilizer use	❑ Minimize fertilizer use. When it comes to fertilizer, more is not better!The excess nutrients from unused fertilizer will run off into the marina basin and potentially cause an algal bloom. Plus, the more you fertilize, the more frequently you have to mow.
Aerate and leave clippings	❑ Aerate the lawn to greatly increase water and nutrient absorption. Leave grass clippings where they fall since they act as a natural organic fertilizer.
Use compost	❑ Use compost or composted fish waste as fertilizer for your plants.
Apply fertilizer smartly	❑ If you must use fertilizer, apply it in late April and again in September. If a third treatment is needed, apply in late May. Apply only a half-pound of nitrogen per 1,000 square feet of lawn at each application. To figure this out, divide 100 by twice the percentage of nitrogen (N) in the fertilizer. This will give you the application rate in pounds of fertilizer per 1,000 square feet of lawn.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management.
⇒ Fish Waste section.

Hazardous Waste

Potential Environmental Impacts:

Marina operators are responsible for determining which materials handled at their facilities is subject to regulation as hazardous materials and hazardous waste. They must also comply with regulations for handling, storage, transportation, and disposal of waste. This section discusses good housekeeping practices for hazardous materials storage to minimize the threat of release.

A listing of potentially hazardous waste streams and disposal recommendations, as well as a much more detailed description of hazardous waste management, is included in Appendix B. Also, check the other sections of this guidebook for description of handling, storage, and disposal of particular types of potential hazardous waste.

Legal Requirements:

Make a hazardous waste determination	❑ A hazardous waste determination must be conducted to establish whether or not disposal of waste solvents and parts washer solutions is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11].
Determine generator status	❑ Determine your hazardous waste generator category and comply with corresponding requirements [RCRA; 40 CFR 262; DHEC R.61-79.262 & 262.]
Storage of quantities of hazardous materials	❑ If you store hazardous materials in quantities above certain threshold amounts, you must report storage of that substance under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [42 USC 11001, and 42 CFR 355]. ❑ Keep copies of Material Safety Data Sheets (MSDS) for all hazardous substances used at your facility [Occupational Safety and Health Act of 1970, 29 USC § 657].
Hazardous waste management	❑ Keep liquid wastes separate and do not dispose of them into the trash. ❑ Label the contents of hazardous waste container(s), including the accumulation start dates. ❑ Manage hazardous waste per regulations. [DHEC R.61-79.262.34].
Employee spill training	❑ Personnel working in spill response or cleanup require training in accordance with applicable state and federal regulations [DHEC R.61-79.265.16].
Employee hazardous waste training	❑ Employees and contractors who may be exposed to hazardous materials are subject to training and educational requirements under the Occupational Safety and Health Administration (OSHA) Employee Right to Know Program. ❑ Employees handling used oil and hazardous waste may require training under state and federal hazardous waste regulation [40 CFR 262] DHEC R.61-79.262.34.]

Best Management Practices:

Minimize use	❑ Where feasible, minimize the use and storage of hazardous materials onsite.
Storage practices: Prevent release Secondary containment Closed containers Separate	❑ Storage practices for solid chemicals, chemical solutions, paints, oils, solvents, acids, caustic solutions, and waste materials, including used batteries, should prevent releases to the environment and inadvertent public contact. Use practices that prevent overfilling, tipping, or rupture. ❑ Observe the following practices: 1. Place any hazardous liquids that are stored outside on durable impervious surfaces, and within berms or impoundments with containment capacity equal to 110 percent volume of the largest tank or container. 2. Liquids should be stored under cover in closed containers. All tanks and drums should be kept closed. 3. Store incompatible or reactive materials securely and in separate areas.
Recycle	❑ Spent antifreeze, used oil, fluorescent light tubes, and batteries should be transported to a recycling facility.
Spent solvents	❑ Spent solvents, paints, and sandblast residues may be hazardous waste and face additional requirements for proper disposal.
Disposal methods	❑ Follow recommended disposal methods for potential hazardous waste streams (see Appendix B).
Ask for assistance	❑ Check with your regional SCDHEC office about hazardous waste identification and management. For compliance assistance information, visit www.scdhec.gov/environment.htm.
Consider fire and local codes	❑ Use storage practices that also conform to fire regulations and local codes.
Use BMPs	❑ Operate under the BMPs in this manual to prevent release of contaminants and generation of hazardous waste. For example: use drip pans, drop cloths or tarpaulins in painting operations to prevent releases, and work under cover when using hazardous materials or conducting shore side engine repair.
Spill plans	❑ Create a spill response plan.

Relevant Sections and Appendices:

⇒ Appendix A for hazardous substance management.
⇒ Appendix B for hazardous waste management.
⇒ Appendix C for used oil and antifreeze management.
⇒ Appendix E for spill reporting and response procedures.
⇒ Antifreeze section.

Floor Drains

Potential Environmental Impacts:

Repair shop wastewater typically contains chemicals such as oils, degreasers, gasoline, diesel, detergents, heavy metals and antifreeze. In some instances it may contain solvents. If discharged through a dry well or septic system to the ground, these chemicals may render drinking water supplies unfit for human consumption. If discharged directly or indirectly to surface water these chemicals can be toxic to fish and other aquatic life.

Legal Requirements:

Hazardous waste and used oil	❑ Any hazardous waste and used oil, which may end up going down a floor drain, must be managed in compliance with applicable regulations [DHEC R.61-79.262.34].

Best Management Practices:

Avoid certain solvents	❑ Avoid or minimize the use of any ammoniated, petroleum or chlorinated solvent-based cleaning agents.
Sweep floors	❑ Sweep or vacuum floors often and immediately before floor washing.
Contain chemicals	❑ Insure that all chemicals used in areas with floor drains are contained.
Spills	❑ Clean up fluid spills quickly with absorbent material. ❑ Cover floor drains if there is a spill. There are inexpensive covers available for this purpose.
Close floor drains	❑ Avoid installing floor drains and close any existing floor drains or connect them to the stationary sewer, if available, and never to drain fields. The drains can be permanently sealed with concrete if they do not connect to a sewer or holding tank.

Relevant Sections and Appendices:

⇒ Appendix B for hazardous waste management.
⇒ Appendix C for used oil management.
⇒ Hazardous Waste section.

Fish Waste

Potential Environmental Impacts:

Too much fish waste in a poorly circulated marina basin can lower oxygen levels in the water. As the waste decomposes, it can lead to foul odor and fish kills. Floating fish parts are also an unsightly addition to marina waters.

Legal Requirements:

Local ordinances	❑ Local harbor management ordinances might prohibit the discharge of fish waste within the jurisdiction of the harbor management plan. Check with local harbor management commission, if applicable.

Best Management Practices:

Prohibit dumping	❑ Prohibit disposal of fish wastes and shellfish carcasses in the marina basin. Post signs displaying the rules.
Prohibit fish cleaning on docks and waters.	❑ Do not permit fish cleaning on docks and floats. ❑ Encourage boaters to clean fish on upland property and not on offshore or inshore waters and dispose of fish wastes as directed below.
Fish cleaning station	❑ Install a fish cleaning station at your marina. ❑ Clearly identify the fish cleaning stations with signs that list the rules and regulations for their use. ❑ Direct rinse water from fish cleaning areas to a sand filter or sanitary sewer. It should be free of solids. ❑ On-site septic systems would be quickly overwhelmed and should not be used as a disposal option for fish waste. ❑ Solids are often too rich in content for loading to small sanitary sewer systems. Fish waste solids should be stored in a holding tank designed for that purpose and managed off-site.
Disposal Alternatives	❑ Use one of the following disposal methods: 1. Compost fish waste where appropriate and use compost on landscaping. 2. Encourage boaters to freeze fish parts and reuse them as bait or chum on the next fishing trip. 3. Use grinder to make chum out of fish carcasses. Freeze and sell chum at marina store. 4. Contact local fish processing plant to see if they will accept fish wastes. 5. If composting or freezing is not an option, encourage boaters to double-bag their fish parts and throw out in their regular trash.

Relevant Sections and Appendices:

⇒ Landscaping section for use of fish compost on landscaping.

Pet Waste

Potential Environmental Impacts:

Pet waste can contain harmful bacteria. If left on marina grounds, it will eventually enter the marina basin and contaminate the water and shellfish beds. The nutrients in pet waste may also encourage weed or algae growth in the marina basin, which may eventually lead to lower oxygen levels in water. Pet waste is also unsightly and may be a source of customer complaints.

Legal Requirements:

Don't pollute	❑ All efforts should be taken to ensure that pet waste is not discharged or left in a manner that will enter into waters of the State.
Local ordinances	❑ Local ordinances may prohibit the leaving of pet waste on private property. Check with your municipality.

Best Management Practices:

Dog walking area	❑ Provide a dog walking area that is identifiable by signs.
Provide pick up bags	❑ Require customers to clean up after their pets. Provide bags for boaters to scoop up waste and dispose of in trash.
Pet waste rules	❑ Specify pet waste rules in marina slip contract.
Cats	❑ Encourage cat owners to maintain a litter box on their boat.

Visit SCDHEC-OCRM's website to learn more about the "Scoop the Poop" campaign:
http://www.scdhec.gov/environment/ocrm/scoop.htm

Dredging

Potential Environmental Impacts:

Maintenance dredging is another source of pollutants at marinas. Dredging temporarily disturbs bottom habitat communities, increases turbidity, and may re-suspend contaminated bottom sediments. Improper disposal of dredge spoils may adversely affect marine environment and human health.

Legal Requirements:

OCRM dredge, fill, and construction permits	❑ Dredging, the erection of structures, and the placement of fill, and work incidental thereto, in the tidal, coastal, or navigable waters of the state waterward of the high tide line are regulated by the SCDHEC-OCRM. It is necessary to obtain all required authorizations from OCRM prior to conducting work such as dredging (including maintenance dredging), construction or placement of new docks, pilings, ramps, floats, piers, travel lift wells, seawalls, bulkheads, rip rap, stormwater outfall pipes, and/or mooring fields waterward of the high tide line in the tidal, coastal, or navigable waters of the state. [SCDHEC R.30-12-15].
ACOE dredge, fill, and construction permits	❑ The U.S. Army Corps of Engineers (ACOE) has jurisdiction over the above-listed activities in tidal, coastal, or navigable waters as well, pursuant to Section 10 of the Rivers and Harbors Act of 1899 [33 USC §401 et seq.], and Section 404 of the Clean Water Act [33 USC §1344 et seq.]. Call the ACOE at 1-866-329-8187 for more information.
Timing	❑ The Endangered Species Act (ESA) and other laws prohibit dredging during critical migration or spawning periods of important species of finfish, shellfish, and wildlife. Contact the U. S. Fish and Wildlife regarding the set periods when in-stream work can occur.
Fill requirements	❑ Comply with local, state and federal fill requirements [CWA §401; SCDHEC R. 30-12(G)]: 1. Do not manage dredge spoils in a wetland or within a flood plain. 2. Store dredge spoils such that rain will not wash sediments back into the water. 3. Testing of the sediments is required prior to any maintenance dredging. Only clean sediments can be used as fill.

Best Management Practices:

Use alternatives	❑ Marinas requiring maintenance dredging more frequently than once every four years should investigate practicable alternatives to increase circulation or reduce sediment accumulation.
Upland disposal	❑ When upland disposal is planned (permits may be required): 1. Use appropriate measures to minimize water quality impacts, reduce turbidity from return waters, and assess any potential impacts to ground water quality. 2. Use technical documents prepared by the US Corps of Engineers when designing containment facilities. 3. Provide appropriate setbacks between the toe of the slope and marine waters, wetlands, and intertidal flats. 4. Employ sediment and erosion control techniques that prevent erosion of containment dikes and deposition of sediments into wetlands and waters.
Test sediments	❑ Conduct appropriate testing of sediments to be dredged in order to evaluate potential impacts from return waters, leachate, and runoff and for selecting an appropriate disposal site and containment design.
Contact OCRM	❑ Before doing ANY work that you think might be in the state's permitting jurisdiction, contact SCDHEC-OCRM to discuss the work that you would like to do or to schedule a pre-application meeting. Some of the maintenance work you want to do may not require any prior authorization or may be eligible for a shortened permit process.

Compressor Blowdowns

Potential Environmental Impacts:

Air compressor blowdown water commonly contains lubricating oil or other potential pollutants. These hydrocarbons can contaminate surface and groundwater when improperly managed.

Legal Requirements:

Manage used oil	❑ Waste compressor oil, filters and oil/water separator waste must be managed as used oil [40 CFR 279; SCDHEC R.61-107.279].

Best Management Practices:

Discharge to sanitary sewer	❑ Either discharge air compressor blowdown water to sanitary sewer or contain it in a holding tank. Do not discharge this wastewater into a septic system.
Remove oil	❑ Remove or retain any floating layer of oil prior to discharge.
Check for leaks	❑ Visually inspect the exterior of air compressor equipment for the presence of oil leaks on a regular basis.
Maintenance schedule	❑ Establish a preventative maintenance program which includes, but is not limited to, a schedule for cleaning parts, replacing oil, and replacing filters for the air compressor equipment as recommended in the manufacturer's specifications.
Dehumidifying system	❑ Evaluate the need for installing a dehumidifying system in the air compressor that would reduce the moisture content of the compressed air and therefore the volume of wastewater generated. This practice may also prolong the life of the compressor by reducing loss of lubrication and rusting.
Oil-free compressor	❑ Investigate purchase of an oil-free air compressor that would eliminate oil from the blowdown water.

Related Sections and Appendices:

⇒ Appendix C for used oil management.

Bilge Cleaning

Potential Environmental Impacts:

Bilge water can commonly contain oil, fuel, antifreeze, and other contaminants. Even small amounts of such materials introduced into the marina environment can cause environmental problems, especially if they persist. Although some oil that spills into the water evaporates, petroleum hydrocarbons can remain suspended in the water column, concentrate on the surface, or settle to the bottom. Oil sheens can block necessary oxygen and light from moving through the surface of the water. According to the EPA, the hydrocarbons in oil harm juvenile fish, upset fish reproduction, and interfere with the growth and reproduction of bottom-dwelling organisms. Additionally, the risk of fines and the possibility of contaminated sediments may make future dredging operations more difficult.

Legal Requirements:

Do not discharge oily bilge water	❑ Oily bilge water must not be allowed to enter the waters of the state [DHEC R.61-79.262.11]. ❑ If oily bilge water cannot be sufficiently cleaned for legal discharge, make arrangements with a waste hauler to properly dispose of the bilge water.
Report oily bilge discharge as spill	❑ Any spill or release of petroleum that results in a sheen on the waters of the state or threatens the waters of the state to include groundwater must be reported immediately to the: 1. SCDHEC Emergency Response Section and 2. National Response Center [Section 311 of the Clean Water Act; 33 USC 1321].
Dispersants	❑ The use of dispersants, such as dishwashing soaps or detergents, on oil or fuel spills or sheen of any size is prohibited in most circumstances [40 CFR 110.4; DHEC R.61-79.262.11]. Dispersants may only be used with permission from federal or state authorities, and only in rare instances.

Best Management Practices:

Before pumping	❑ Before pumping out a bilge, visually inspect the bilge water to determine whether there is a visible sheen of oil. ❑ Use oil absorbent materials to remove oil before pumping a bilge. ❑ Use an oil/water separator to remove oil from bilge water. ❑ Don't use soaps and detergents to clean up oily bilge water.
Require bilge pad use	❑ Require the use of bilge pads to help keep bilge water discharge clean. Have bilge pads on hand for sale to marina patrons, or direct your tenants to a marine supply store in your area.
Pumping to sanitary sewer	❑ Some pump-out stations may allow bilge water to be pumped out to the sanitary sewer after the oil has been physically removed. Prior approval of the local sanitary sewer authority is required. Large municipal sewer systems often have sophisticated requirements.

Train employees	❑ Train employees and contractors on bilge cleaning best management practices.
Educate customers	❑ Educate customers to keep their engines properly maintained, to continually check and fix all leaks, and to keep an absorbent pad or pillow in the bilge to absorb small drips and spills.

Relevant Sections and Appendices:

⇒ Appendix C for used oil management.
⇒ Appendix E for state and federal spill reporting requirements.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.

Pressure Washing

Potential Environmental Impacts:

When the marine organisms that accumulate on the bottom of a vessel are removed, fragments of bottom paint and hull materials are often chipped off in the process. In a concentrated form, these untreated particles can have localized water quality impacts. Pressure washing in particular removes antifouling paint from boat bottoms, which can get washed into the marina basin. Sediments contaminated with copper or other toxic ingredients in antifouling paints can result in future problems and expenses for the marina operator when faced with dredge material disposal.

Legal Requirements:

Paint chip and sludge disposal	❑ After pressure washing, the paint chips and sludge in holding tanks or treatment units is a special waste that can only be disposed of at an approved facility [DHEC R. 61-107.258].
NPDES wash water permit	❑ For additional information, contact your local SCDHEC office.

Best Management Practices:

Use low pressure water	❑ Encourage boat washing with low-pressure water only. Where practical, use a regular garden-type hose and a soft cloth.
Don't use chemicals	❑ Do not use soaps, solvents, and other chemicals. This allows more options for reuse or discharge of treated wash water and protects water quality.
Collect and treat wash water	❑ Collect and treat wash water. The following are options for collection and treatment: 1. Wastewater from the washing operation can be collected and reused through a closed loop pressure wash system, or can be used after treatment to irrigate landscaped portions of the marina. 2. Collect all of the wash water, treat it, and discharge to sanitary sewer or store for hauling to a sewage treatment plant. Discharge to the sanitary sewer or on-site septic system requires approval. 3. Pressure wash water can also be directed to a holding or settling tank for treatment. If the wastewater does not contain chemical additives, it may be diverted into wet pond detention basins, vegetated buffers, or swales. 4. If none of the above-mentioned practices is feasible and the only apparent option is to discharge pressure washing wastewater to a surface water or storm drain, wash water should be treated prior to discharge. Options for treatment include filtering the wash water through catch basin inserts that will separate out debris, paint chips, and sediment. The use of filter fabric, oil/water separators, or sand filters should also be considered.

Alternatives: Wash over permeable surface with filter fabric Wash away from waterbody	❑ If collecting and treating wash water is not feasible: 1. Wash boats on a level permeable surface (lawn, crushed stone, or sand) so that the wash water can infiltrate into the ground, if there is no drinking water well on the property. 2. Place filter fabric over the permeable surface to collect solids and sediments. A hazardous waste determination should be conducted on collected pressure wash wastewater to establish whether or not disposal of the collected material is subject to hazardous waste regulations [40 CFR 262.11]. 3. To ensure that the wash water has enough time to settle into the ground, pressure wash boats as far away as possible from the water, preferably over a grassed or otherwise vegetated area. Add a row of hay bales between the water's edge and the pressure washing operation. 4. If it is not possible to wash boats over a permeable surface, pump the wash water to a permeable surface for infiltration.
If well nearby	❑ If there is a well nearby, pressure wash boats on an impervious surface as far as possible from the well, and treat the wash water to collect solids and sediments before discharge, preferably to the sanitary sewer.
Contain chemical discharges	❑ If chemical additives, such as solvents or degreasers, are used, the pressure washing must be conducted in self-contained systems that prevent any discharge to storm drains.
Minimize water use	❑ Minimize the amount of water used when boats are pressure washed out of the water. For example, wash the hull above the waterline by hand.
Prohibit in-water bottom cleaning	❑ Prohibit in-water bottom cleaning or hull scraping or any process that occurs underwater which removes antifouling paint from the boat hull. This practice makes it impossible to treat what is cleaned from the boat bottom.

Relevant Sections and Appendices:

⇒ Appendix B for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Hazardous Waste section.

Winterizing Vessels

Potential Environmental Impacts:

The activity of preparing a vessel for winter storage may contribute to non-point source pollution through the use of heavy equipment (fork lifts, cranes and travel lifts) as well as through various storage procedures (use of antifreeze and battery storage).

Legal Requirements:

See other sections	❑ Please see sections referenced below for legal requirements for specific winterizing activities.

Best Management Practices:

Antifreeze	❑ Use propylene glycol antifreeze (usually pink), which is less toxic than ethylene glycol (usually green), to winterize all systems except "closed" or freshwater cooling systems. ❑ Re-use or recycle antifreeze. Store spent antifreeze in a container clearly marked "Spent Antifreeze Only."
Bilges	❑ Inspect and clean bilges prior to extended vessel storage. Clean all water, oil, or foreign materials from the bilge using absorbent material.
Do not use toxic cleaners	❑ Avoid the use of heavy-duty detergents containing ammonia, sodium hypochlorite, chlorinated solvents, petroleum distillates, acids, or lye.
Use dry rack storage	❑ Encourage use of state-of-the-art dry rack storage facilities. They minimize the need for more intensive forms of hull maintenance. ❑ Prior to lowering a vertical lift or marine railway, clean up the device to prevent contamination of the receiving waters from oil or any hazardous substance.
Gasoline	❑ To reduce waste from contaminated gasoline in fuel tanks, store boat motors according to manufacturers' guidelines. ❑ Top off the tanks if the boat is stored in water, or empty and purge the tank if stored on land. Topping off tanks in the summer can result in spills due to fuel expansion. Top off in the summer just when you are taking her out.

Relevant Sections and Appendices:

⇒ Appendix C for used oil and antifreeze management.
⇒ Antifreeze section.
⇒ Bilge Cleaning section.
⇒ Pressure Washing section.
⇒ Decommissioning Engines section.
⇒ Oil section.
⇒ Battery Replacement section.

Boat Disposal

Potential Environmental Impacts:

Sunken or abandoned vessels can pose environmental and safety risks by leaking oil and fuel in a concentrated area. They can also cause navigational and safety hazards. If boats are properly disposed of before they become unseaworthy, the chances that the vessel will become an environmental risk are reduced.

Legal Requirements:

Boat Disposal	❑ There are no legal requirements specifically for boat disposal.
Boat Abandonment	❑ The following government agencies possess removal requirements of abandoned vessels based upon location and potential for pollution. SCDHEC-OCRM, SCDNR, U. S. Corps of Engineers, U. S. Coast Guard and FEMA.

Best Management Practices:

Abandoned boats	❑ Report the abandonment of a vessel to the proper authorities and implement measures to secure, possess and remove the vessel to highground as prescribed by maritime law. Reduce the vessel to manageable pieces and properly dispose in an approved solid waste facility. Authority jurisdictions can be viewed at www.scdhec.gov/environment/ocrm/vessel_removal.htm
Boat fuel	❑ Empty the boat's fuel tanks and reuse or dispose of used gasoline as hazardous waste.
Remove and recycle	❑ Remove and recycle the following boat parts and fluid: 1. Used oil 2. Used antifreeze 3. Boat engine (recycle as scrap metal) 4. Any metal with reuse value, such as lead, zinc, aluminum 5. Refrigerants
Mercury parts	❑ Remove all mercury-containing devices (i.e., some electronic equipment, bilge pump switches, old ship's barometers) and handle as hazardous waste. If removed by the boater, the mercury containing devices can be managed as household hazardous waste.
Hull pieces	❑ Reduce the size of the hull into smaller pieces as directed by the solid waste facility. The smaller the pieces, the easier it is for the facility to take.

Relevant Sections and Appendices:

⇒ Appendix B for hazardous waste management information.
⇒ Hazardous Waste section.

Fueling Station Operation

Potential Environmental Impacts:

The small spills that occur during boat fueling can accumulate and become a much larger problem. According to the EPA, complex hydrocarbon compounds in oil and gasoline are toxic to marine life, upset fish reproduction, and interfere with growth and reproduction of bottom dwelling organisms. Oil and gas that are ingested by one animal can be passed to the next animal that eats it. In a marina, petroleum will also deteriorate the white Styrofoam in floats and docks, and discolor boat hulls, woodwork, and paint. Gasoline spills are also a safety problem because of the product's flammability. A single pint of petroleum product released into the water can cover one acre of water surface area and can seriously damage aquatic habitat.

Legal Requirements:

NFPA requirements	❑ All marine service stations are subject to the National Fire Protection Association's (NFPA) *Automotive and Marine Service Station Code* (NFPA 30A). These requirements are adopted locally. Check with your municipal fire marshal for local requirements.
<u>Fuel station requirements:</u> Nozzles Attendant Extinguisher Signs Before fueling During fueling After fueling	❑ The following requirements are listed in NFPA 30A as pertaining to marine service stations. It is not intended to be a complete list of requirements: ❑ Dispensing nozzles must be of the automatic-closing type without a latch-open device or holding clip [NFPA 30A, Section 10-4.2]. Remove old fuel nozzle triggers that lock in the "on" position. ❑ All marine service stations must be attended by an employee responsible for supervising, observing, and controlling the dispensing of liquids whenever the station is open for business [NFPA 30A, Section10-4.7]. ❑ At least one fire extinguisher with the minimum classification of 40-B:C must be located within 100 feet of each pump, dispenser, and pier-mounted liquid storage tank [NFPA 30A, Section10-8.1]. ❑ Signs with the following legends printed in 2-inch (5cm), red block capital letters on a white background must be posted in the dispensing area of all marine service stations [NFPA 30A, Section 10-11.8]: ▪ BEFORE FUELING: o Stop all engines and auxiliaries o Shut off all electricity, open flames and heat sources o Check all bilges for fuel vapors o Extinguish all smoking materials o Close access fittings and openings that could allow fuel vapors to enter enclosed spaces of the vessel ▪ DURING FUELING: o Maintain nozzle contact with fill pipe o Wipe up spills immediately o Avoid overfilling o Fuel filling nozzle must be attended at all times ▪ AFTER FUELING: o Inspect bilges for leakage and fuel odors o Ventilate until odors are removed
SPCC Plan	❑ If your facility stores a certain amount of gas or oil, (1,320 gallons or more

	in above ground storage) it may require a Spill Prevention Control and Countermeasure (SPCC) Plan [40 CFR 112].
Report spills	❑ Any spill or release of petroleum that results in a sheen on the waters of the state or threatens the waters of the state to include groundwater must be reported immediately to the: 1. SCDHEC Emergency Response Section and 2. National Response Center [Section 311 of the Clean Water Act; 33 USC 1321].

Best Management Practices

Fuel dock location	❑ Locate fuel docks in protected areas to reduce potential for accidents due to passing boat traffic, and design them so that spill containment equipment can be easily deployed to surround a spill and any boats that may be tied to the fuel dock.
Spill materials at fuel dock	❑ Store spill containment and control materials in a clearly marked and easily accessible location, attached or adjacent to the fuel dock. ❑ Keep oil absorbent pads and pillows available at the fuel dock for staff and customers to mop up drips and small spills.
Sell spill materials	❑ Carry vent line whistles, vent cups, oil absorbent fuel collars and other fuel spill preventative devices in your ships store.
Personal watercraft	❑ Provide a stable platform for fueling personal watercraft, if your facility services significant numbers of them.
Inspect hoses	❑ Routinely inspect and repair fuel transfer equipment, ie. hoses and pipes.
Fuel connections	❑ Place plastic or nonferrous drip trays lined with oil absorbent materials beneath fuel connections.
Train staff	❑ Train fuel dock staff to handle and dispense fuel properly. Fuel dock staff should be trained to: 1. Fill tanks slowly and carefully. Prevent overfilling of gas tanks by listening to or keeping a hand at the air vent, if possible; a pronounced flow of air is emitted when the tank is nearly full. 2. Remember that fuel expands in warm weather and to fill tank to no more than 90% capacity to allow for that expansion. 3. Use a fuel collar or fuel bib and keep an absorbent pad or pillow ready to catch spills, drips, or overflow. 4. Put a drip pan under portable fuel tanks. If possible, fill portable fuel tanks ashore. 5. Prevent spills as well as respond to spills. 6. Give information and direction to customers.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix E for state and federal spill reporting requirements and SPCC Plan information.
⇒ Spill section.

Fuel Storage

Potential Environmental Impacts:

Fuel spills are very damaging to the marina environment. According to the EPA, the complex hydrocarbon compounds in oil and gasoline are toxic to marine life, upset fish reproduction, and interfere with growth and reproduction of bottom dwelling organisms.

Legal Requirements:

Facility storing >10,000 lbs fuel	❑ If your facility stores 10,000 pounds or more of gasoline, diesel fuel, and/or fuel oil, either above- or underground for dispensing or for on-site use, you must report storage of that substance under the Emergency Planning and Community Right-to-Know Act of 1986 [42 USC 11001, and 42 CFR 355].
Storage tanks NFPA	❑ Both above and underground storage tanks and their piping systems are subject to the National Fire Protection Association's (NFPA) *Automotive and Marine Service Station Code* (NFPA 30A). These requirements are adopted locally. Check with your municipal fire marshal for local requirements.
Underground storage tanks (USTs) Requirements	❑ **Underground Petroleum Storage:** Tanks with ten percent or more of total volume below grade (including the volume of connected underground pipes) are considered Underground Storage Tanks (USTs) and must meet certain requirements [UST Regulation R.61-92.280.12; 40 CFR 280]. The general requirements are that: 1. Owners and operators of USTs must provide release detection for tanks and piping. [DHEC R. 61-92.280.41 and 42]. 2. The tank and piping be constructed of non-corrosive materials or externally coated cathodically protected steel and installed according to manufacturer's specifications; 3. The facility has an approved method of leak detection which includes the maintenance of all activity records for 5 years; 4. Fill-pipes on tanks have means to collect spills from delivery hoses; 5. The tanks have overfill protection, such as overfill prevention equipment, that will automatically shut off flow into the tank when the tank is no more that 95% full [Sec. 280.20(C)(ii)(a)], or alert the transfer operator when the tank is no more than 90% full by restricting flow into the tank or triggering a high level alarm (280.20.(C)(ii)(B), or restrict flow 30 minutes prior to overfilling, alert the operator with a high level alarm one minute before overfilling, or automatically shut off flow into the tank so that none of the fittings located on top of the tank are exposed to product due to overfilling (280.20(C)(ii)(c). 6. The tank must be registered with the SCDHEC. 7. If a facility has a total underground buried storage capacity of more than 42,000 gallons of petroleum product, it may require a Spill, Prevention, Control, and Countermeasure (SPCC) Plan [40 CFR 112.1].
Underground tank removal	❑ There are additional requirements for facility owners or operators when they are closing USTs through removal or in-place abandonment [DHEC R.61-92.280.71].

Aboveground petroleum storage SPCC plans	❑ **Aboveground Petroleum Storage**: If your facility stores a certain amount of gas or oil in aboveground tanks (a total aggregate volume greater than 1,320 gallons) it may require a Spill Prevention, Control and Countermeasure (SPCC) Plan [40 CFR 112], which outlines a facility-wide plan to prevent spills and contingency plans in case of spills. ❑ SPCC plans require [40 CFR 112]: 1. The aboveground storage tank should be located within a dike or over an impervious storage area. 2. The tanks require secondary containment of 110% of the volume of the largest container. 3. A professional engineer must approve written spill prevention and response measures as adequate.
Report spills	❑ Any spill or release of petroleum that results in a sheen on the waters of the state or threatens waters of the state to include groundwater must be reported immediately to the: 1. SCDHEC Emergency Response Section and 2. National Response Center [Section 311 of the Clean Water Act; 33 USC 1321].
Make hazardous waste determination	❑ A hazardous waste determination must be conducted on any materials used to clean a spill to determine whether or not disposal of the materials is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11].

Best Management Practices:

Secure areas when not in use	❑ Fueling facilities and storage areas must be secured when not in use by appropriate shutdown devices and security locks.
Spill Contingency Plan	❑ Even if you are not required to, develop a Spill Contingency Plan for all fuel storage and dispensing areas.
Post phone numbers	❑ Post emergency phone numbers in an obvious location.
Inspect for leaks	❑ Regularly inspect aboveground fuel storage tanks and associated piping for leaks.
Tank roof	❑ If possible, cover the tank with a roof to prevent rainwater from filling the containment area.

Relevant Sections and Appendices:

⇒ Appendix A for hazardous substance management information.
⇒ Appendix B for hazardous waste management information.
⇒ Appendix E for spill plan and reporting information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Hazardous Waste section.

Fuel Tank Disposal

Potential Environmental Impacts:

According to the EPA, the complex hydrocarbon compounds in petroleum products are toxic to marine life, upset fish reproduction, and interfere with growth and reproduction of bottom dwelling organisms. Improperly disposed fuel tanks can also impact groundwater supplies and pose a serious fire safety risk.

Legal Requirements:

Tank disposal	❑ If a portable or fixed tank for gasoline or an oil and gasoline mixture is empty, meaning drained of all material that can be removed from the container by normal methods like pouring or pumping, AND no more than one inch (or 3% by weight) of residue remains in the container, it can be disposed of as regular solid waste or can be recycled as scrap metal [40 CFR 261.7]. ❑ If a tank is not empty, it must be disposed of as hazardous waste [40 CFR 262.11; DHEC R.61-79.262.11].
Contact UST Program	❑ Prior to closing underground storage tanks (UST) through removal or in-place abandonment, you must notify the UST Program and follow applicable regulations [UST, R.61 (92.280.71)(a)].

Best Management Practices:

Leftover fuel	❑ Use, recondition or recycle all usable fuel before disposing of the tank.
Keep away from heat	❑ Store tanks awaiting disposal away from ignition sources like heat or sparks.
Label tanks	❑ Clearly label tanks "Waste Gasoline."
Fuel canisters	❑ Large fuel canisters should be de-valved with a fire marshal permit or taken to a hazardous waste collection facility.
Disposable canisters	❑ Disposal propane canisters should have their pressure released using an official puncturing device and used as scrap metal. These pressurized canisters could explode dangerously and should not be punctured with any other device. If you do not have the appropriate device, take the canisters to a hazardous waste collection facility.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.

Oil

Potential Environmental Impacts:

Even small amounts of oil introduced into the marina environment can cause environmental problems, especially if they persist. Although some oil that spills into the water evaporates, petroleum hydrocarbons can remain suspended in the water column, concentrate on the surface, or settle to the bottom. Because of the properties of oil, a cup of oil can spread a very thin sheen over more than an acre of calm water. Oil sheens can block necessary oxygen and light from moving through the surface of the water. According to the EPA, the hydrocarbons in oil harm juvenile fish, upset fish reproduction, and interfere with the growth and reproduction of bottom-dwelling organisms.

Legal Requirements:

Manage oil	❑ Manage used oil, and any materials used to clean a spill, in accordance with the requirements specified in Appendix C [40 CFR 279; DHEC R.61-107.279].
Oil storage - SPCC	❑ Storage of used oil is subject to all applicable Spill Prevention, Control and Countermeasures [40 CFR 112].
Report spills	❑ Any spill or release of petroleum that results in a sheen on the waters of the state or threatens the waters of the state to include groundwater must be reported immediately to the: [DHEC R.61-68.E.4] 1. SCDHEC Emergency Response Section and 2. National Response Center at [Section 311 of the Clean Water Act; 33 USC 1321] .
Do not use dispersants/ soap or other dispersants	❑ The use of dispersants, such as dishwashing soaps or detergents, on a fuel spill or sheen of any size on the surface water is prohibited in most circumstances. Dispersants may only be used with permission from federal or state authorities, and only in rare instances [40 CFR 110.4, DHEC R.61-68.E.5].

Best Management Practices:

Keep used oil separate from other liquids	❑ Do not allow anything else, such as gasoline, solvents, paint, varnishes, pesticides, or antifreeze to be added to the used oil container. The introduction of these materials will result in the whole mixture having to be managed as a hazardous waste, adding a large expense. In general, engine oil, transmission fluid, hydraulic fluid, and gear oil are considered used oil and may be placed in the waste oil container. As a precaution though, check with your recycler before mixing any materials.
Reuse oil	❑ Burn your used oil in an approved used oil fuel space heater. This is a cost saving measure that eliminates the cost of waste oil removal.
Recycle oil	❑ Have a registered used oil transporter haul the used oil offsite for recycling. Used oil that is recycled is subject to less stringent regulations than hazardous waste.

Recycle oil filters	❑ Recycle used oil filters. Puncture and thoroughly drain them first. If you generate large numbers of filters, consider purchasing a filter crusher.
Spill-proof oil changes	❑ Purchase a non-spill vacuum-type system for spill-proof oil changes, or to suction oily water from bilges. ❑ Slip a plastic bag over used oil filters prior to removal to prevent drips.
Use absorbent pads	❑ Use oil absorbent materials to clean up small drips and spills. ❑ Sell oil absorbent pads in the ships store.
Customer oil collection: Consult EQC Post signs Separate tanks	❑ Install collection facilities for used oil and used oil filters and encourage boaters to use them, or direct boaters to their municipal used oil collection facility, usually at local transfer station. ❑ Collected oil should be recycled or burned in an approved heater; otherwise the marina may be subject to stricter regulations due to the increased generation of hazardous waste. Contact EQC for a consultation visit to ensure there is no change in generator status. ❑ Post signs indicating how important it is that the used oil not be contaminated. ❑ Consider providing separate tanks for used oil, one for patrons to use and a secure tank for used oil collected by marina facility staff.
Educate: don't use detergents	❑ Educate customers and staff to not use soaps and detergents to clean up oily drips and spills on the water.
Bilge water	❑ Avoid pumping bilge water that is oily or has a visible sheen. Use oil absorbent materials or an oil/water separator to remove oil before pumping. ❑ Purchase a portable or stationary oil/water separator to clean bilge water. These devices draw contaminated water from bilges; capture hydrocarbons in a filter and discharge clean water.

Relevant Sections and Appendices:

- ⇒ Appendix C for used oil management.
- ⇒ Appendix E for spill plan and reporting information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Spills section.

Antifreeze

Potential Environmental Impacts:

Antifreeze can pollute groundwater, surface water and drinking water supplies if dumped, spilled or leaked, and is harmful to marine and aquatic life. While in an engine, antifreeze can become contaminated with lead or fuel to the point where it must be managed as a hazardous waste. There are two types of antifreeze. Antifreeze with ethylene glycol, a greenish-yellow, odorless, sweet-tasting chemical, poses a serious health hazard to humans and animals if ingested. Antifreeze with propylene glycol, which is usually pink and marketed as nontoxic, is less toxic and is recommended for use.

Legal Requirements:

Make hazardous waste determination	❑ Waste antifreeze can be either hazardous or non-hazardous, depending upon the levels of contaminants it contains (the most common contaminants are lead, benzene, and zinc). In order to determine which is the case, the generator must either have their waste tested, or utilize reliable "knowledge of process" information for the waste (if available) [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. Such information could include testing by haulers or studies by industry trade groups. ❑ A hazardous waste determination must be conducted on any materials used to clean antifreeze spills [40 CFR 262.11; DHEC R.61-79.262.11].
Manage hazardous waste	❑ Antifreeze that is hazardous waste must either be recycled or disposed of via a permitted hazardous waste hauler. While stored on-site, it must be managed in accordance with hazardous waste storage requirements [40 CFR 262.11; DHEC R.61-79.262.11].
Do not discharge	❑ Antifreeze that is determined to not be a hazardous waste is still considered a polluting liquid waste and may not be discharged into the waters of the state or placed in a location where it is likely to end up in the waters of the state [SC Pollution Control Act, Sec. 48-1-90(a), R.61-79.262.90].

Best Management Practices:

Choose Pink	❑ Use propylene glycol antifreeze (usually pink), which is less toxic than ethylene glycol (usually green), where appropriate. Sell propylene glycol in your ships store.
Transfer Carefully	❑ Use drip pans and funnels when transferring antifreeze to minimize spills and drips. ❑ Wear eye protection, clothing that covers exposed skin and rubber gloves when transferring antifreeze. ❑ Pour slowly and carefully to avoid splashing.

Segregate, Cover, and Label	❑ Segregate used antifreeze from other wastes. ❑ Provide well-marked, coverable containers that are in good condition to collect antifreeze. ❑ Label the containers "Used Antifreeze." ❑ Never mix antifreeze with other chemicals.
Contain	❑ Recover antifreeze used to winterize systems. ❑ Store antifreeze in a container that can be completely drained with a wide opening. Keep antifreeze storage containers closed at all times. ❑ Provide containment to prevent spills from entering ground water or stormwater.
Recycle	❑ Recycle used antifreeze. ❑ Recycling options for antifreeze include: 1. Purchase on-site recycling equipment and recycle at your facility. Conduct a RCRA hazardous waste determination (i.e., test the residue or filter cartridge) at least one time to verify that the waste is not hazardous before recycling on-site. Keep a copy of the test results in your files; 2. Contract with a hauler that recycles the antifreeze off-site.

Relevant Sections and Appendices:

⇒ Appendix B for hazardous waste management information.
⇒ Appendix C for used antifreeze management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Hazardous waste section.

Rags and Oil Absorbent Pads

Potential Environmental Impacts:

Contaminated rags and oil absorbent pads that are improperly managed may pose fire, health, and environmental risks. Minimizing contamination of rags and pads reduces health risks to workers and emissions of volatile organic compounds to the air, improves effluent discharge from industrial laundries if you use washable rags, decreases liability risks, and saves money by minimizing solvent use.

Legal Requirements:

Types of contaminated rags/pads	❑ How used cloth rags/pads are managed depends on what the rags are contaminated with [40 CFR 262.11; DHEC R.61-79.262.11]. ❑ If the used rag is: 1. Dripping with used oil, manage as used oil. 2. Contaminated with used oil, but not dripping, evaluate for hazardous waste then properly manage. 3. Contaminated with paints or solvents, or other hazardous materials, manage as hazardous waste. 4. Contaminated with other material (or only with mild cleaners or soaps), dispose of in regular trash.
Leased rags/ pads	❑ If you lease rags/pads and have them laundered, and they are contaminated with hazardous waste, you must manage them as hazardous waste until they are picked up for laundering. However, they do not require a hazardous waste manifest [40 CFR 262.11; DHEC R.61-79.262.11].

Best Management Practices:

Separate rags/pads	❑ Keep oily rags/pads separate from rags that have been contaminated with hazardous materials such as solvents.
Wring rags/pads	❑ Remove excess solvent from rags/pads by wringing or pressing excess into coverable container.
Reduce solvent use	❑ Reduce the amount of solvent used in cleaning through improved work practices. Use solvents only when absolutely necessary. Use non-VOC cleaners.
Recyclable rags	❑ Use cloth rags that can be recycled by an industrial laundry service.
Laundry service	❑ Contract with a permitted industrial laundry service that will pick up soiled rags and deliver clean rags on a regular basis. The laundry service may require you to limit the solvent and other chemical content of the soiled rags because of the limits on their permit to discharge wastewater into the sanitary sewer.
Rag/pad storage	❑ Store ignitable rags/pads in NFPA approved, labeled containers until they can be laundered.
Rags/pads with gasoline	❑ Reuse rags or absorbent pads that have soaked up ONLY gasoline.

Rags/pads with oil	❑ If rag or absorbent pad has soaked up ONLY diesel or oil: 1. If the used oil collector will accept them for energy recovery, place in a covered container in the used oil collection area for pickup. 2. If the rag or pad is dry and the used oil collector will not accept them, check that the landfill will accept them and then double bag and place in trash.

Relevant Sections and Appendices:

⇒ Appendix B for hazardous waste management information.
⇒ Appendix C for used oil management information.
⇒ Hazardous Waste section.
⇒ Oil section.

Degreasing / Parts Washing

Potential Environmental Impacts:

Degreasers used to clean metal parts may be organic solvents (chlorinated or non-chlorinated) or water-based cleaners. Organic solvents usually contain volatile organic compounds (VOCs), which can evaporate quickly. Many VOCs combine with combustion emissions to form ground level ozone, a major component of "smog." Ozone damages lungs and degrades many materials. When solvents are released and reach water, even in very small quantities, they may render the water unfit for human consumption and uninhabitable for aquatic life. Many organic solvents are also combustible, which may pose a fire hazard.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be conducted to establish whether or not disposal of waste solvents and parts washer solutions is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. A hazardous waste determination must also be conducted on any materials used to clean a spill.

Best Management Practices:

Use non-VOC cleaners	❑ Use water-based, non-VOC cleaners that are less hazardous than solvent-based degreasers. They are also less toxic and non-flammable. Don't use a toxic or flammable organic solvent if you don't have to.
Volatile organic compound (VOC) use procedures	❑ Any parts washer that uses VOCs at room temperature should follow these equipment design and operating procedures: 1. The cover must be easily operated with one hand and closed whenever the parts washer is not being used for 2 minutes or more. 2. Parts must be covered during draining. 3. Waste solvent must be stored in covered containers. 4. Cleaned parts must be drained for at least 15 seconds, or until dripping ceases, whichever is longer. 5. Degreasing solvent must be sprayed as a compact fluid stream (not a fine, atomized, or shower type) and at a pressure that does not exceed 10 psi. 6. Operation must cease at the occurrence of any visible solvent leaks. 7. Post labels on or near each unit summarizing the applicable operating requirements. 8. Keep monthly records on the amount of solvent added to each unit.
Contain solvents	❑ If using VOC-based solvents is unavoidable, catch excess solvents in a pan and reuse.
Separate solvents	❑ Do not mix or add other types of solvents to any degreaser.
Don't dump solvents	❑ Never discard any degreasing solvent into sinks, floor drains or onto the ground. It will find its way to local waters and as little as a thimble full may render thousands of gallons of water uninhabitable for aquatic life or unfit for human consumption. You may be held responsible for remediation.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Antifreeze section.
- ⇒ Battery Replacement section.
- ⇒ Oil section.
- ⇒ Rags and Oil Absorbent Pads section for used rag disposal information.

Battery Replacement

Potential Environmental Impacts:

If handled improperly, lead acid batteries pose certain hazards. Battery components are toxic and corrosive, and can also be a fire and explosion hazard. Lead and sulfuric acid can contaminate the air, soil, and water. Direct contact with sulfuric acid can burn the skin and eyes. Exposure to lead in the environment can pose a serious health hazard to children. Lead is also very toxic to aquatic life and can enter marina basins through stormwater when spent lead acid batteries are not managed properly.

Legal Requirements:

Universal Waste Rule: Label Store < 1 year Keep in container Contain spills Package appropriately Shipment Collection	❑ Marinas that store less than 5,000 kilograms (11,000 pounds) of spent lead-acid batteries would be classified as "Small Quantity Handlers" under the Universal Waste Rule. Such handlers are required to do the following [40 CFR 273 Subpart B; DHEC R.61-79.273]: 1. Mark all batteries (or containers holding such batteries) with the words "Universal Waste – Batteries," "Waste Batteries," or "Used Batteries." 2. Store batteries for no more than one year before sending them off-site for recycling. 3. Place any battery that shows signs of leakage, spillage, or damage in a container that is kept closed, is structurally sound, and is compatible with the contents of the battery. 4. Immediately contain any releases of batteries or electrolyte. 5. Before shipping batteries off-site, ensure that they are packaged, marked, labeled, and placarded in accordance with U.S. DOT rules for hazardous materials. 6. Ship the batteries to another Universal Waste handler, or to an authorized destination facility for recycling. Prior to shipment, ensure that the receiving facility agrees to receive the shipment. Any shipments that are rejected must be taken back, or directed to another handler or destination facility. In addition, if you transport batteries from one site to another, you must comply with Universal Waste transporter requirements [40 CFR 273 Subpart D; DHEC R.61-79.273.18]. 7. A marina that accepts lead acid batteries from the public for temporary storage prior to recycling must be registered with DHEC. [DHEC R.61-107.8].
Make hazardous waste determination	❑ A hazardous waste determination must be conducted on spilled acid and broken lead acid batteries, and any materials used to clean a spill, to establish whether or not their disposal is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.273.18].
If > 500 lbs stored onsite	❑ If over 500 pounds of batteries are stored on-site, report the chemicals in lead acid batteries (sulfuric acid and lead) as part of your hazardous and toxic chemical inventory and notifications required under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [40 CFR 355].

Best Management Practices:

Limit long term storage	❑ Avoid long-term storage of lead acid batteries by sending accumulated batteries to a reclaimer within six months of receipt. Limit accumulation of large quantities of spent batteries. If necessary, ship more frequently.
Store properly	❑ Store spent lead acid batteries upright in a secure location, protected from the elements. ❑ Never stack batteries directly on top of each other. Layer with wood. ❑ Never drain batteries or crack the casings.
Broken batteries	❑ Place cracked or leaking batteries in a sturdy, acid-resistant, leak-proof, sealed container (e.g., a sealable 5-gallon plastic pail). The container should be kept closed within the battery storage area.
Transport properly	❑ Strap batteries to pallets or wrap batteries and pallet in plastic during transport.
Keep records	❑ Keep written records of weekly inspections of spent lead acid batteries.

Relevant Sections and Appendices:

- ⇒ Appendix A for hazardous substance management information.
- ⇒ Appendix B for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Hazardous waste section.

Upland Engine Operations

Potential Environmental Impacts:

Working on boat engines has potential environmental impacts. If engine fluids are not well managed, they may be transported by stormwater into the marina basin, where they can harm fish and other aquatic life. If certain fluids are mixed, they may become subject to hazardous waste requirements and be more expensive to dispose. Waste fluids from upland engine operations may include: engine oil, transmission fluid, power steering fluid, brake fluid, hydraulic fluid and antifreeze, all of which are recyclable liquids. Many of these fluids can be hazardous, and may pick up contaminants (e.g., lead from bearings) during use in an engine.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be conducted to establish whether or not disposal of waste fluids is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. A hazardous waste determination must also be conducted on any materials used to clean a spill.

Best Management Practices:

Don't discharge fluids	❑ Never pour waste fluids down any drains, including stormwater drains, or onto the ground. Exception: waste fluids may be discharged into sealed and permitted blind sumps that capture contaminants for proper treatment and disposal. ❑ Do not dispose of liquid waste in dumpsters.
Separate and recycle fluids	❑ Recycle fluids whenever possible. In general, the purer the waste stream, the higher the value to the recycler. Never mix gasoline, antifreeze, or chlorinated solvents into used oil because it may cause the used oil to become a hazardous waste, therefore requiring higher disposal costs.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Appendix C for used oil and antifreeze management.
- ⇒ Antifreeze section.
- ⇒ Oil section.
- ⇒ Rags and Oil Absorbent Pads section.

Commissioning Engines

Potential Environmental Impacts:

The waste fluids generated when commissioning engines on the upland, if not properly managed, can potentially enter the water in stormwater runoff. Contact with the fluids can harm fish and other marine and aquatic life. If certain fluids are mixed, they may become subject to hazardous waste requirements and be more expensive to dispose. Waste fluids from commissioning engines may include engine oil, gasoline, diesel fuel, and antifreeze.

Legal Requirements:

Gasoline disposal	❑ If stale gasoline cannot be reconditioned, dispose of it as hazardous waste [40 CFR 262.11; DHEC R.61-79.262.11].

Best Management Practices:

Check for leaks	❑ Inspect fuel lines for leaks or potential leaks such as cracks and loose connections. These can be persistent sources of engine fluids to the bilge.
Encourage boaters	❑ Household hazardous waste programs may accept unwanted gasoline and gas/oil blends generated by individual boat owners. Encourage marina patrons to dispose of their waste gasoline through their own municipal household hazardous waste collection programs, if appropriate.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste minimization tips.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Antifreeze section.
- ⇒ Oil section.
- ⇒ Rags and Oil Absorbent Pads section.

Decommissioning Engines

Potential Environmental Impacts:

The waste fluids generated when decommissioning engines on the upland, if not properly managed, can potentially enter the water in stormwater runoff. Contact with the fluids can harm fish and other marine and aquatic life. If certain fluids are mixed, they may become subject to hazardous waste requirements and be more expensive to dispose. Waste fluids from decommissioning engines may include engine oil, gasoline, diesel fuel and antifreeze.

Legal Requirements:

Gasoline disposal	❑ If stale gasoline cannot be reconditioned, dispose of it as hazardous waste [40 CFR 262.11; DHEC R.61-79.262.11].

Best Management Practices:

Use pink antifreeze	❑ Use propylene glycol antifreeze (usually pink) to winterize all systems except "closed," or freshwater cooling systems. Propylene glycol antifreeze is much less toxic than ethylene glycol antifreeze. Use the minimum amount of antifreeze necessary for the job.
Use stabilizers	❑ Where appropriate, add stabilizers to fuel to protect engines against corrosion and the formation of sludge, gum, and varnish. Stabilizers are available for gasoline and diesel fuels, and for crankcase oil. This also eliminates the problem of stale fuel disposal in the spring. Check manufacturer's warranty on engine before adding fuel stabilizers.
Fill fuel tank only 90%	❑ Fill fuel tanks to 85-90% full to prevent flammable fumes from accumulating and to minimize the possibility of condensation leading to corrosion. Do not fill the tank more than 90% full if the boat has an external overflow vent. The fuel will expand as it warms in the springtime, and fuel will spill out the vent line of a full inboard tank.
Unwanted gas	❑ Household hazardous waste programs may accept unwanted gasoline and gas/oil blends generated by individual boat owners. Encourage marina patrons to dispose of their waste gasoline through their own municipal household hazardous waste collection programs, if appropriate.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste minimization tips.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Antifreeze section.
- ⇒ Battery Replacement section.
- ⇒ Oil section.
- ⇒ Rags and Oil Absorbent Pads section.

Zinc Replacement

Potential Environmental Impacts:

Sacrificial zinc anodes fight corrosion in salt water by deterring corrosion of metal hull and engine parts. Elevated levels of zinc in marina sediments have been found to be associated with boat operation and maintenance. Zinc, in high concentrations, can be toxic to marine life, and can be potentially toxic to humans who eat contaminated shellfish or fish.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be performed on waste zinc anodes being disposed of [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. However, if the anodes can be recycled as scrap metal, they do not have to be managed as hazardous waste.

Best Management Practices:

Recycle	❑ Recycle zinc anodes with other scrap metals. Scrap metal dealers will take spent zinc anodes.
Storage	❑ Store zinc anodes with other recyclable scrap metals in clearly marked containers protected from the elements.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.

Refrigerants

Potential Environmental Impacts:

Refrigerants become an environmental problem when they escape into the air. Chlorofluorocarbons (CFCs, or Freon™) are gases used primarily as refrigerants in motor vehicle air conditioners, building air conditioning units, refrigerators, and freezers. When CFCs are released into the air, they rise into the upper atmosphere where they damage the protective ozone layer in the stratosphere. A single CFC molecule can destroy 100,000 molecules of ozone. The ozone layer absorbs the sun's harmful ultraviolet (UV) radiation and when it is damaged living things on the earth become exposed to harmful UV.

Legal Requirements:

Air conditioner service	❑ Everyone who services air conditioners must be certified in the proper use of CFC recovery and recycling equipment [Clean Air Act, Title VI, Section 608 and 609, 40 CFR 82.34]. ❑ The Clean Air Act prohibits release of CFCs and halons. Anyone repairing or servicing motor vehicle air conditioners must recover or recycle CFCs on-site or recover CFCs and send them off-site for recycling [40 CFR 82.34].

Best Management Practices:

Refrigerant alternatives	❑ Investigate alternatives to ozone-depleting refrigerants. These include HFC-134 (or R-134a), R-409a and R-404a.
Repair leaks	❑ The EPA does not require that leaks be repaired, although it recommends that vehicle owners consider repairing leaks to reduce emissions and extend the useful life of their air conditioner. Repair of leaking systems will help vehicle owners avoid the need to continue to refill systems with high priced refrigerant.
CFC handling	❑ For more information on CFC handling, contact the EPA at (800) 821--1237, or the National CFC Hotline at (800) 296-1996, between 7:00 a.m. to 1:00 p.m. Monday through Friday.

Scraping and Sanding

Potential Environmental Impacts:

Hull paints often contain heavy metals and other toxins. Sanding chips and dust that fall onto the ground can enter a marina basin through stormwater runoff. Paint chips and sanding debris can be particularly dangerous when shellfish ingest them and other animals, including humans, then ingest the shellfish.

Legal Requirements:

Make hazardous waste determination	❑ You must determine if your sanding dust is hazardous and manage accordingly [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. ❑ If the sanding dust is not hazardous, it must be handled as a Special Waste. This waste may be disposed of at a solid waste landfill if the site meets the design criteria for municipal solid waste landfills. [DHEC R. 61-107.258].

Best Management Practices:

Designate indoor or upland area	❑ Conduct sanding and scraping away from the water's edge. Designate an indoor or upland area for debris-producing maintenance such as scraping, sanding, and sandblasting. The boat maintenance area can be a temporary structure or plastic sheeting provided to minimize the spreading of dust and windblown material. The work area should be well marked with signs.
Use tarps	❑ Place drop cloths or tarps under vessels when sanding or scraping. ❑ Weight the bottom edges of tarps and drop clothes to keep them in place.
Impervious pad	❑ Consider installing an impervious pad for conducting debris-producing maintenance.
Clean up immediately	❑ Clean up all debris, trash, sanding dust, and paint chips immediately following any maintenance or repair activity. ❑ When sanding or grinding hulls over a paved surface, vacuuming or sweeping loose paint particles is the preferred cleanup method. Do not hose the debris away. ❑ Dispose of water-based (non-hazardous) waste paint chips and sanding waste in a covered dumpster or other covered solid waste receptacle.
Non-windy days	❑ Avoid scraping or sanding on windy days, unless conducting activity in an enclosed maintenance structure.
Use vacuum sanders	❑ Use dustless or vacuum sanders when sanding. These tools can collect over 98% of dust generated instead of releasing it into the air. Workers can use this equipment without full suits or respirators and have fewer cleanups when the job is done. ❑ Require customers and contractors to use dustless or vacuum sanders. Rent or loan the equipment to them. ❑ Post signs indicating the availability of the dustless or vacuum sanders.
Provide covered container	❑ Provide a covered collection drum for the dust from vacuum sanders and other scraping debris.

In water activities	❑ Restrict or prohibit sanding and scraping boats that are in the water, to the greatest extent practicable. ❑ If sanding, scraping, or grinding must take place while the boat is in the water, use tarps and sheeting installed between the vessel being worked on and the floats or walking surface to prevent dust, paint chips, debris, or other materials from falling or being blown into the water. The sheeting should have a tight seal to the vessel and adjacent surfaces to prevent leakage of any paint chips or dust outside the work area. Remove the sheeting carefully to prevent the loss of accumulated waste material into the water.
Minimize scraping need	❑ Where feasible, boat maintenance and storage practices that minimize the need for scraping and sanding should be encouraged.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Abrasive Blasting section.

Paint Stripping

Potential Environmental Impacts:

Many paint strippers are solvent-based, and contain chemicals that are dangerous to humans. Some are flammable and most can cause water and air pollution if not handled properly. Toxic chemicals in paint strippers may include methylene chloride (also called dichloromethane, or DCM), methyl ethyl ketone (or 2-Butanone), acetone, toluene, methanol, N-methylpyrrolidone (NMP), or xylene. There are some less environmentally damaging and less hazardous paint strippers available on the market.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be conducted to establish whether or not disposal of used paint strippers is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. A hazardous waste determination must also be conducted on any materials used to clean up a spill. Manage waste accordingly.

Best Management Practices:

Use alternatives	❑ Consider alternatives to chemical paint stripping depending on the characteristics of the surface being stripped, the type of paint being removed, and the volume and type of waste produced. Alternatives include scraping, sanding, and/or abrasive blasting. Use a heat gun to remove paint and varnish where appropriate. ❑ If paint strippers must be used, use soy-based or water-based products that are less hazardous.
Reduce leftovers	❑ Use only the minimum amount of paint stripper needed for a job.
Reduce evaporation	❑ Prevent evaporation by using tight fitting lids or stoppers. Reducing evaporation protects air quality, saves product and money.
Reduce spills	❑ Reduce the chance of spills during transport by storing unused paint stripper where it's used most in the shop. Place the product on an impervious base.
Educate and train employees	❑ Encourage careful use by informing all workers and operators of the hazardous nature of solvents and the purchasing and recycling costs. ❑ Train employees to use less paint stripper, to properly store new and used paint strippers, to use wise clean-up procedures, and to prevent leaks and spills.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Abrasive Blasting section and Scraping and Sanding section.

Prepping and Painting Boat Bottoms

Antifouling Paint

Potential Environmental Impacts:

Most antifouling paint contains elemental copper, cuprous oxide (a copper compound), or tin-based compounds (tributyl tin) that kill organisms attempting to attach to a painted surface. By design, antifouling paints are toxic to marine life and can be absorbed by edible fish and shellfish. Concentrations of tributyltin (TBT) as low as a few parts per trillion have caused abnormal development and decreased reproductive success in oysters, clams, and snails (EPA, 1993). The toxins in antifouling paints enter the environment through spillage, sanding, sand blasting, or scraping. Antifouling paint chips left on the ground or driveway can be transported into the water by stormwater runoff. The toxicants in antifouling paint can be passed up the food chain from mussels and worms to fish, birds, and humans.

Legal Requirements:

No TBT on vessels < 25m	❑ The use of anti-fouling tributyltin (TBT) containing paints is prohibited on vessels less than 25 meters (82 feet) in length. Vessels with aluminum hulls, which quickly corrode from cuprous oxide anti-foulant coatings, are also allowed to use TBT [Organotin Antifouling Paint Control Act 33 U.S.C. 2401].
Make hazardous waste determination	❑ A hazardous waste determination must be conducted to establish whether or not disposal of traditionally used antifouling paints, in solid or liquid form, is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC r.61-79.262.11]. A hazardous waste determination must also be conducted on any materials used to clean a spill.
Abrasive blast media	❑ Abrasive Blast Media Containing Pesticides (such as TBT paint chippings) must be handled as special waste. This waste may be disposed of at a solid waste landfill if the site meets the design criteria for municipal solid waste landfills [DHEC R. 61-107.258].

Best Management Practices:

Use alternative products	❑ Switch to long-lasting, low-toxicity antifouling paint. ❑ Recommend antifouling paints containing the minimum amount of toxin necessary for the expected condition to your customers. Stock only those in the ship store. ❑ Stay informed about antifouling products, like Teflon, silicone, polyure-thane, and wax that have limited negative impacts. Pass on the information to your customers.
Don't use in fresh water	❑ Discourage use of antifouling paint on boats kept in fresh water.
Non-moored boats	❑ Recommend that boats that are rack stored or trailered use alternatives to antifouling paint such as polyurethane, bottom wax, or non-metallic epoxies, since antifouling paint is not necessary for boats that are not continuously in the water.

Sanding	❑ Use dust-collecting sanders when sanding anti-fouling paint. ❑ Sandblasting is not recommended for removal of antifouling paint. ❑ Sweep and collect paint chips (don't hose) immediately after scraping or sanding.
Mix away from water	❑ Mix paints and solvents away from the water and prevent dripping into the water. Avoid mixing paint or cleaning brushes on open floats or other structures over the water.
Use drip pans, tarps, and sheeting Weight tarp bottoms	❑ Use drip pans, tarps, and sheeting to contain droppings and spilled materials. Drip pans should be used for all paint mixing, solvent transfer, or equipment clean up operations unless the operations are conducted in controlled areas away from storm drains, surface waters, shorelines, piers, docks, or floats. ❑ Weight the bottom edges of tarps and plastic sheeting to keep them in place.
Reduce leftovers	❑ Mix only enough paint necessary for a job. ❑ Save excess or unused antifouling paint for future uses.
Reuse solvents	❑ Reuse solvents and thinners by draining the clean product off the top once solids settle out.
Prohibit in-water bottom cleaning	❑ Prohibit in-water bottom cleaning, hull scraping, or any process that occurs underwater that could remove antifouling paint from the boat hull. It is impossible to treat what's cleaned from the boat bottom. ❑ If in-water bottom cleaning is allowed, require that customers or contractors use only soft sponges to clean marine growth and use stainless steel pads or brushes only on unpainted metal areas (never on bottom paint). Colored plumes of paint in the water near underwater cleaning activity should not occur.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Abrasive Blasting section for sandblasting information.
- ⇒ Scraping and Sanding section.

Hull and Topside Painting

Potential Environmental Impacts:

Hull and topside paints may be toxic and inhalation may cause cancer. If spilled, they may harm aquatic life and water quality. Additionally, the fumes released by some paints can contribute to air pollution.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be conducted on painting wastes and any materials used to clean up spilled paint to establish whether or not their disposal is subject to hazardous waste regulations [RCRA; 40 CFR 262.11; DHEC R. 61-79.262.11].
Paint can residue	❑ Paint cans and other containers that have residues of hazardous (e.g., oil-based) paints must be handled as hazardous waste unless they have been "emptied," which means: ▪ Drained of all material that can be removed from them by normal methods (e.g., pouring or pumping), AND ▪ No more than one inch (or 3% by weight) of residue remains in the container [40 CFR 261.7; DHEC R.61-79.262.34]. ❑ "Emptied" containers of hazardous paints and those that have dried out residues of non-hazardous (e.g., latex) paints may be recycled as scrap metal, or disposed of in the regular trash.
Report spills	❑ If paint or varnish that is discharged into the navigable waters of the state causes a visible sheen, report the spill to the National Response Center at (800) 424-8802 [§311 of the Clean Water Act; 33 USC 1321].

Best Management Practices:

Storage	❑ Store all paint in a centralized, covered area. Return all unused paints to that area and immediately and properly manage empty containers.
Leftover paint	❑ Avoid the problem of having leftover paint by mixing only as much paint as is needed for a given job. ❑ Consider sharing leftover paints with customers or setting up an exchange area for customers to swap unused items. Contact the local SCDHEC regional office to ensure a leftover paint swap area does not change your hazardous waste generator status.
In-water painting	❑ Limit in-water painting to interior surfaces and bright work, where paint materials and spills can be contained and prevented from entering the water. Do not allow in-water hull scraping or any process that occurs underwater to remove paint from the boat hull.
Small containers	❑ Although it is not advised to conduct painting while the boat is in the water, if it must be done, transfer the paint to the vessel in a small (less than one gallon), tightly covered container. Small containers mean small spills.

Designate area	❑ Designate an upland area for debris-producing maintenance activities such as sanding and painting. ❑ Do as much work as possible away from the water, including mixing paints and/or cleaning brushes.
Use tarps	❑ Use tarps or drop cloths to collect drips. Weight the bottom edges of tarps and plastic sheeting to keep them in place.
Use drip pans	❑ Use drip pans for all paint mixing, paint transfer, and/or equipment clean up. ❑ Material captured in drip pans should be used or returned to their original container if possible.
Use alternative products	❑ Use low-VOC, high solids content, and water-based paints and surface preparation products instead of traditional paints and primers. ❑ Encourage the use of non-toxic, high bonding, and easily cleaned hull coatings.
Use brushes and rollers	❑ Use brushes and rollers instead of paint sprayers whenever possible, since paint spraying is potentially more wasteful and more harmful to the environment.
Reuse solvents	❑ Reuse solvents and thinners by draining the clean product off the top once solids settle out.
Spills	❑ Contain and clean up spilled paint or varnish immediately.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix E and Spills section for spill reporting requirements and actions.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Paint Spraying section.

Abrasive Blasting

Potential Environmental Impacts:

In abrasive blasting, sand, glass or plastic bead, walnut shells, metal shot or grit, sodium bicarbonate, or dry ice pellets are used with air pressure or water pressure to remove paint. Traditional abrasive blasting of large boat hulls is a messy job resulting in many hundreds of pounds of spent abrasive mixed with bottom paint. While the abrasive can be relatively cheap, the labor is costly and the potential environmental impacts are large.

Legal Requirements:

Make hazardous waste determination	❑ You must determine if your blasting wastes are hazardous [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11] and manage accordingly.
Abrasive blast media	❑ Abrasive Blast Media Containing Pesticides (such as TBT paint chippings) must be handled as special waste. This waste may be disposed of at a solid waste landfill if the site meets the design criteria of municipal solid wastes landfills. [DHEC R.61-107.258].
Fugitive emissions	❑ Fugitive particulate emissions shall be controlled in a manner, or to a degree, that it does not create an undesirable level of pollution [DHEC R. 61-62.6].

Best Management Practices:

Use alternatives	❑ Consider alternatives to abrasive blasting on-site, such as dustless sanders or contracting the work off-site.
Containment and location	❑ If abrasive blasting must be done, perform it within well-ventilated spray booths or plastic tarp enclosures away from the water to minimize the spreading of dust and windblown material, and to prevent residue from being carried into surface waters. ❑ Prohibit uncontained blasting in the marina.
Blast on non-windy days	❑ If tarp enclosures are used, avoid blasting on windy days. Because tarps are not rigid, they do not eliminate wind flow through the blasting area, and so they allow the wind to carry blasting material and residue into surface waters.
Waste storage	❑ Store spent sandblasting grit, scrapings, and debris under cover in a manner that minimizes contact with process water or stormwater.
Recycle blast media	❑ Recycle used blast media. Investigate companies that recycle used blast media into new media or other products.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.

Paint Spraying

Potential Environmental Impacts:

Paint spraying has potential air and water quality impacts. Most paints contain volatile organic compounds (VOCs) that evaporate quickly and are ignitable. Many paints are also toxic. When released to the atmosphere, VOCs combine with combustion emissions of nitrogen oxides (NO_x) to form ground level ozone, which damages lungs and degrades many materials. Marine paint may be toxic to aquatic and marine life.

Legal Requirements:

Make hazardous waste determination	❑ You must determine if your painting wastes (including leftover paints, spray gun solvents, and rags), or any materials used to clean a spill, are hazardous [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11] and manage accordingly.

Best Management Practices:

Use brushes and rollers	❑ Whenever possible, use brushes and rollers instead of paint sprayers since paint spraying is potentially more wasteful and more harmful to the environment than applying paint by hand.
<u>Location preferences</u>: Shipyard Inside Inland with sheeting Covered slips with sheeting	❑ Avoid unprotected paint spraying. Paint spraying may be conducted (in order of preference): 1. Inside of commercial shipyard facilities that are designed for this activity; 2. Inside designated structures with ventilation and filter systems; 3. At designated shore-side areas away from open water, with temporary structures or plastic sheeting provided to minimize the spreading of overspray; or 4. In covered slips, with tarps and sheeting installed with a tight seal between the vessel being worked on and the floats or walkway surface. Be sure to remove the protective sheeting with care to prevent loss of accumulated waste material into the water. ❑ Prohibit paint spraying on the water without protective sheeting.
Use high transfer efficiency equipment	❑ Use spray equipment with high transfer efficiency. Paint guns used in spray booths should be either High Volume Low Pressure (HVLP) or High Efficiency Low Pressure (HELP), which are rated at 65% efficient paint transfer. HVLP guns can reduce overspray by 25% to 50%. Electrostatic spraying also requires less pressure, produces little overspray, and uses relatively little paint.
Alternative products	❑ Encourage the use of non-toxic, high bonding, and easily cleaned hull coatings.
Non-windy days	❑ If spraying outdoors with protective sheeting, avoid working on windy days when controlling the protective covering and the paint spray is difficult.

Reduce leftovers	❑ Limit the amount of leftover paint and decrease solvent use by using a smaller paint spray gun cup.
Reuse solvents	❑ Reuse solvents and thinners by draining the clean product off the top once solids settle out.
Paint gun cleaning	❑ Clean paint guns in an enclosed gun cleaner and capture all solvents.
Solvent disposal	❑ Spent paint gun solvent must be treated as hazardous waste and should never be discharged into drains or onto the ground. ❑ Solvents should be recycled either in an onsite distillation unit or by a permitted recycling facility. ❑ Evaporation of waste solvent or waste solvent-based paint constitutes illegal disposal of hazardous waste.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Rags and Oil Absorbent Pads section.

Compound Waxing

Potential Environmental Impacts:

Whether a hull is slightly oxidized or heavily oxidized and stained or whether a one or two-step5 process is required to improve the luster of the hull, there are few environmental impacts from compounding and waxing a hull. Basic pollution prevention techniques and proper management of the substances used to restore fiberglass hulls will help keep waxes and cleaners out of the environment.

Legal Requirements:

Make hazardous waste determination	❑ Most stain removers, rubbing compounds and waxes are not hazardous materials, although some have hazardous constituents. If any of the products you use contain hazardous ingredients, you must determine if the waste materials that are generated are hazardous [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11] and manage accordingly.

Best Management Practices:

Use non-hazardous	❑ Check all product Material Safety Data Sheets and purchase those that are non-hazardous. ❑ If possible, use phosphate free, biodegradable and non-toxic soap when prepping a hull. When removing tough stains, use only as much stain remover as necessary, or use a more abrasive rubbing or polishing compound.
Location	❑ Conduct compounding and waxing away from the water.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
- ⇒ Rags and Oil Absorbent Pads section.

Varnishing

Potential Environmental Impacts:

Spills of oil-based varnishes may be detrimental to the marine and aquatic environment. Since they are petroleum-based, spills may have similar impact as oil spills. Chemicals in varnishes can be highly flammable and potentially harmful to human health.

Legal Requirements:

Make hazardous waste determination	❑ Many varnishes are composed of hazardous materials. You must determine if your waste varnish is hazardous [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. A hazardous waste determination must also be conducted for any materials used to clean a spill. Manage hazardous waste accordingly.

Best Management Practices:

Reduce leftovers	❑ Avoid the disposal problem of leftover varnish by mixing only as much as is needed for a given job. ❑ Consider sharing leftover varnishes with customers or setting up an exchange area for customers to swap unused items.
Use alternatives	❑ Use less hazardous, water-based varnishes that pose less of a threat to human health or the environment.
Clean up spills appropriately	❑ In case of spills of varnish on land, use absorbent material to clean it up and collect any contaminated soils. ❑ Spills in waterways should be contained and mopped up with booms or pads that repel water but absorb petroleum. ❑ Do not use soaps or detergents to clean up spills. They spread out the problem rather than helping and the detergent is toxic to marine life.

Relevant Sections and Appendices:

⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Spills section.

Teak Refinishing

Potential Environmental Impacts:

Teak cleaners that contain acids and caustics can be toxic to marine life when spilled in the water.

Legal Requirements:

Make hazardous waste determination	❑ A hazardous waste determination must be conducted for spent teak cleaner and for any materials used to clean a spill [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. Manage hazardous waste accordingly.

Best Management Practices:

Use alternative products	❑ Avoid teak cleaners containing acids (such as phosphoric acid or oxalic acid) or those labeled "caustic, corrosive, or acidic." ❑ Clean teak with a mild, phosphate-free detergent with bronze wool, if possible.
Use dustless sander	❑ If sanding teak, use a dustless or vacuum sander.
Location	❑ If possible, conduct teak refinishing in upland maintenance area. If not possible, use safer cleaners and avoid flushing excess teak cleaner and teak oil into the marina basin.

Relevant Sections and Appendices:

- ⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
- ⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.

Fiberglassing

Potential Environmental Impacts:

The processes involved in fiberglassing, whether using epoxy, polyester, or vinylester resins for small or big jobs, can have environmental impacts. Some of the materials used in the fiberglassing process can be dangerous to workers. Some resins, catalysts and the solvents used for cleanup can be flammable, irritate the skin and respiratory system, and may cause cancer.

Legal Requirements:

Make hazardous waste determination	❑ Styrene, the primary component of gelcoat and other polyester resins, is an ignitable chemical. Therefore, cans or containers of waste resins may be regulated as ignitable hazardous waste. Certain hardeners and accelerators may also be regulated as hazardous waste [RCRA; 40 CFR 262.11; DHEC R.61-79.262.11]. ❑ Chlorinated solvents and the rags used to apply them must be managed as hazardous waste [RCRA; 40 CFR 262.11; DHEC R.61-79.262.34].
Hazardous waste storage >10,000 lbs	❑ If you store over 10,000 pounds of any hazardous substance requiring a Material Safety Data Sheet (such as a solvent), you must comply with the reporting requirements under Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) [40 CFR 355].
Hull or deck manufacture	❑ If you manufacture hulls or decks for recreational boats made from fiberglass or aluminum *and* emit 10 tons or more per year of any one federally designated hazardous air pollutant (HAP) like styrene, toluene, or xylene, and/or 25 tons or more per year of all HAPs combined, several EPA air emission standards must be followed [40 CFR 63, Subpart VVVV].

Best Management Practices:

Minimize waste	❑ Minimize waste by working with small batches of resin.
No liquid hardener in trash	❑ Avoid putting liquid hardener in the trash, since it can spontaneously combust when mixed with sawdust and other materials.

Relevant Sections and Appendices:

⇒ Appendix A for hazardous substance management information.
⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix F and Stormwater Runoff Management Practices section for stormwater discharge information.
⇒ Rags and Oil Absorbent Pads section.

Emergency Planning

Potential Environmental Impacts:

Being adequately prepared for emergency action can potentially reduce the overall environmental impact of a spill, fire, or other event.

Legal Requirements:

SPCC Plan	❑ You need to prepare a Spill, Prevention, Control, and Countermeasure (SPCC) Plan, which outlines a facility-wide plan to prevent and clean up oil and gasoline spills [Clean Water Act, 40 CFR 112] if your facility stores gas or oil: 1. Above-ground in any size tank(s) with a total aggregate volume over 1,320 gallons (containers of less than 55 gallons and/or permanently closed storage tanks are exempt from the total); or 2. In underground storage tanks with total capacity greater than 42,000 gallons (unless the tanks are compliant with the state requirement for USTs)
Hazardous waste contingency plan	❑ If your facility is a Large or Small Quantity Generator of hazardous waste, you must prepare a hazardous waste contingency plan [40 CFR 262.34; DHEC R. 61-79.265.50-56].
NFPA	❑ If you have a marine service station, you must design and manage it to prevent spills, fire, and other dangers as required in the National Fire Protection Association's (NFPA) Automotive and Marine Service Station Code (NFPA 30A). These requirements are adopted locally. Check with your municipal fire marshal for local requirements.
Storage of quantities of hazardous materials	❑ If you store hazardous materials in quantities above certain threshold amounts, you must report storage of that substance under the Emergency Planning and Community Right-to-Know Act of 1986 [42 USC 11001, and 42 CFR 355]. ❑ Keep copies of Material Safety Data Sheets (MSDS) for all hazardous substances used at your facility [Occupational Safety and Health Act of 1970, 29 USC Section 657; DHEC R.61-79.262.34].
Report spills	❑ Any spill or release of petroleum that results in a sheen on the waters of the state or threatens the waters of the State to include groundwater must be reported immediately to the: 1. SCDHEC Emergency Response Section and 2. National Response Center [Section 311 of the Clean Water Act; 33 USC 1321].

Best Management Practices:

Assess hazards	❑ Assess potential hazards at your facility, both manmade (fuel spill or fire) and natural (tsunami or earthquake).
<u>Spill response kits:</u> Convenient location Kit materials	❑ Store spill containment and control materials in a clearly marked location, readily accessible to work and storage areas. ❑ The spill response kits should include: 1. Absorbent pads and booms (small and large) 2. Empty sandbags 3. Sewer pipe plugs 4. Dry absorbent 5. Square end shovels 6. A pry bar 7. Curtain boom (long enough to span the mouth of the marina and to completely encircle the largest vessel in moorage) 8. Drain covers 9. Fire extinguishers, and 10. A copy of the facility's spill contingency plan.
<u>Emergency response plans:</u> Site plan Hazardous materials Designate staff actions Marina spokesperson Emergency numbers Actions to be taken Other help Update plan Train employees Inform others	❑ Develop emergency response plans that include written procedures for action addressing potential emergency situations. ❑ Keep the plan in an accessible location. ❑ Emergency response plans should: 1. Include a site plan of the facility, showing valves, pipes, tanks, structures, roads, hydrants, docks, power and fuel shutoffs, hazardous material storage locations, telephones, and location of emergency response materials. 2. Describe the type, amount, and location of hazardous and potentially hazardous materials stored on-site. 3. Identify which staff member will take what action in the event of an emergency. 4. Designate one person as the spokesperson for the marina. 5. Include a list of emergency phone numbers for: o USCG National Response Center [for spills] o SCDHEC Emergency Response Section and the National Response Center [Section 311 of the Clean Water Act; 33 USC 1321]. o Local fire and police o Facility owner o Local harbormaster o Neighboring marinas that have emergency response equipment o Spill response contractors 6. List and describe actions to be taken during an emergency and, based on likely threats, what equipment should be deployed. 7. Indicate when additional resources should be called for assistance. ❑ Update the emergency response plan as necessary each year. ❑ Review the emergency response plan with employees and train them on proper use of containment material. ❑ Inform local fire department and harbormaster of your emergency response plan.

Spill contingency plan	❑ Develop an oil spill contingency plan, even if you are not required by law to prepare an SPCC Plan. A spill contingency plan and emergency response plan can be combined into one document. ❑ The plan should identify: 1. Potential spill sources 2. Oil and hazardous materials used or stored in the area 3. Spill prevention measures (e.g., security, inspection, containment, training, equipment), and 4. Spill emergency procedures, including: a. Contact information of marina personnel qualified to lead spill response efforts. b. Notification and spill containment measures.
Severe weather checklist	❑ Develop an action checklist for severe weather. Preparations to reduce environmental risks include securing all dumpsters, removing or securing all objects that could potentially blow or wash away, and securing waterside sewage pumpouts and/or dump stations.

Relevant Sections and Appendices:

⇒ Appendix A for hazardous substance management information.
⇒ Appendix B and Hazardous Waste section for hazardous waste management information.
⇒ Appendix E for state and federal spill reporting requirements.
⇒ Spills section.

Appendices 95

Appendix A: Hazardous Substance Management 97

Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA)

[or Superfund Amendments and Reauthorization Act of 1986 (SARA Title III)]

EPCRA [40 CFR 355] is a federal law, enforced by the federal Environmental Protection Agency, managed by the state emergency response commission (SERC) and local emergency planning committees (LEPC) (http://www.scemd.org/Library/lepc/duties.pdf). EPCRA applies to storage and handling of hazardous materials (chemicals). EPCRA requires that facilities report storage of certain chemicals above a certain amount to the state and local authorities. This law is called both "EPCRA" and "SARA Title III". In this section, it will be referred to as "EPCRA."

The principal reason for EPCRA is to provide planners, responders, and citizens with information on the manufacture, use, and environmental release of potentially toxic chemicals in their communities.

EPCRA has four major sections that require reporting to state and local authorities:

- Hazardous chemical storage reporting, or the "community right-to-know" requirements (Sections 311-312)
- Emergency planning (Section 301-303)
- Emergency release notification (Section 304)
- Toxic chemical release inventory (Section 313)

This section provides a summary of EPCRA and is designed to guide you to determine whether you might be required to comply.

Reporting Hazardous Chemicals (EPCRA Section 311-312, or "Community Right-To-Know Requirements")

EPCRA Section 311—List of Chemicals Form

The Occupational Safety and Health Administration (OSHA) requires employers to keep copies of Material Safety Data Sheets (MSDS) for each hazardous chemical available for employees. Distributors are required to provide MSDSs for hazardous substances [29 CFR 1910.1200].

You must complete a "Section 311—List of Chemicals Form" if you have chemicals on site that are required under OSHA to have MSDSs and you meet one of the following two conditions:

1. You store one or more substance listed as an "extremely hazardous substance" in quantities equal to or greater than the listed "threshold planning quantity" or 500 lbs., whichever is less [The list of extremely hazardous substances and their threshold planning quantities is available in 40 CFR 355.30e(2)(1) or through the EPA website listed in the box below.]

OR

2. You store 10,000 pounds or more of any hazardous substance requiring a MSDS.

EPCRA Section 312 – Annual Tier II Reporting

If you are subject to the Section 311 reporting requirements described above, you must also submit an annual "Tier II Emergency and Hazardous Chemical Inventory" form. The "Tier II Emergency and Hazardous Chemical Inventory" form requires you to inventory your facility's hazardous chemicals and identify their storage locations.

You must submit a completed Tier II report to the SERC, *AND* the LEPC, *AND* your local fire department each year by March 1.

What are marinas likely to report under the Section 311 and Tier II reporting requirements?

You must report storage of gasoline, diesel fuel, propane or fuel oil (all of which require MSDSs) in excess of 10,000 pounds. This does not include the fuel in boats dockside. Gasoline weighs roughly 6.19 pounds per gallon, diesel weighs roughly 7.05 pounds per gallon, and propane weighs roughly 4.23 pounds per gallon at 60 degrees Fahrenheit.

You must also report the sulfuric acid in lead acid batteries in excess of 500 pounds. The average small boat battery contains approximately 5 pounds of sulfuric acid. You must also report the lead in lead acid batteries in excess of 10,000 pounds. The average small boat battery contains approximately 30 to 40 pounds of lead per battery. (Note that this reporting requirement applies to the batteries that you store before or after use on your facility, but not the ones that boaters can physically move on and off their boats.)

Reporting Storage of Extremely Hazardous Substances

(EPCRA Section 302)

Section 302—Emergency Planning Notification Form

If you store any of 356 listed "extremely hazardous substances" in excess of the listed Threshold Planning Quantity, you are required to complete a "Section 302-Emergency Planning Notification Form" and submit it to the SERC *AND* the LEPC within 60 days of when the substance becomes present at the facility. (http://www.scdhec.gov/eqc/baq/html/eqcepcra.html)

If you are required to file a "Section 302-Emergency Planning Notification Form," you must also designate a facility emergency coordinator who will be the emergency contact person for your facility.

What are marinas likely to report under the Section 302 reporting requirements?

You must also report the sulfuric acid in lead acid batteries in excess of 1,000 pounds. The average small boat battery contains approximately 5 pounds of sulfuric acid. The management and disposal of lead acid batteries is covered by DHEC R.61-79.273 (Universal Waste Rule) and R.61-79.266.80 (spent lead acid batteries that are reclaimed.).

In the unlikely event that you store chlorine in liquid or granular form (not tablets or powder), you must report storage of 100 pounds or more.

Accidental Release Notification (EPCRA Section 304)

If a spilled substance is a listed "extremely hazardous substance" or a Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) listed "hazardous substance released in amounts greater than the listed Reportable Quantity", then you must notify the SERC by calling (888) 481-0125, *AND* your LEPC, *AND* the National Response Center at (800) 424-8802.

Under EPCRA, you are *not* required to report a chemical spill to the federal government above the Reportable Quantity if the release:

- Does not affect persons off-property;
- Is federally permitted;
- Is a continuous release, except when statistically significant;
- Is of certain nuclear material;
- Results from pesticide or fertilizer applications; and
- Is petroleum, unless "extremely hazardous substance" present. (Note: this does not exempt you from reporting an oil spill to state and federal authorities as described in Appendix E.)

Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of a 911 emergency number, calling the operator. This emergency notification needs to include:

- The chemical name;
- An indication of whether the substance is extremely hazardous;
- An estimate of the quantity released into the environment;
- The time and duration of the release;
- Whether the release occurred into air, water, and/or land;
- Any known or anticipated acute or chronic health risks associated with the emergency and, where necessary, advice regarding medical attention for exposed individuals;
- Proper precautions, such as evacuation or sheltering in place; and
- Name and telephone number of contact person.

The facility owner or operator is also required to provide a written follow-up emergency notice as soon as practicable after the release. The follow-up notice or notices must:

- Update information included in the initial notice, and
- Provide information on actual response actions taken and advice regarding medical attention necessary for exposed individuals.

NOTE: If you are unsure about whether to report a chemical spill to the National Response Center, it is better to report than not. Not reporting can result in a costly error.

Toxic Release Inventory (EPCRA Section 313)

Toxic Chemical Release Inventory Form

While it is unlikely that any marina in South Carolina will be subject to these reporting requirements, EPCRA Section 313 (commonly referred to as the Toxics Release Inventory or TRI) requires certain facilities to complete a Toxic Chemical Release Inventory Form annually for specified chemicals.

You are required to submit a "Toxic Chemical Release Inventory Form" each year by July 1 to the US-EPA's EPCRA Reporting Center (address below) and the SC SERC for each potentially toxic chemical that is stored in quantities above a certain amount if your facility:

1. Is classified in major group 37 under Standard Industrial Classification code (primary classification), AND
2. Has 10 or more full-time employees, AND
3. Stores, uses, or otherwise processes a toxic chemical in an amount above the listed threshold quantity.

If your facility meets these three criteria, you must file a Toxic Chemical Release Inventory Form, either a "Form R" or "Form A," annually by July 1 for each toxic chemical. The reports must be sent to the SERC and EPCRA Reporting Center:

EPCRA Reporting Center
P.O. Box 3348
Merrifield, VA 22116-3348
ATTN: Toxic Chemical Release Inventory.

DHEC
EPCRA Reporting Point
2600 Bull Street
Columbia, S.C. 29201
Telephone: 803-898-3894

Copies of both forms can be obtained by calling the EPCRA hotline at (800) 424-9346, or at http://www.epa.gov/tri

FOR MORE INFORMATION...

Contact the Emergency Planning and Community Right-to-Know Information Hotline at (800) 424-9346 or TDD (800) 535-7672. Monday through Friday, 9:00 am to 6:00 pm, Eastern Standard Time.

Or visit:
http://www.epa.gov/ceppo, or
http://yosemite.epa.gov/oswer/CeppoWeb.nsf/content/EPCRA.htm?OpenDocument

Preferred Disposal Options for Potential Hazardous Waste Streams

WASTE	PREFERRED DISPOSAL OPTIONS If multiple options are listed, the first option (**boldfaced**) is the preferred method.
Aerosol Cans	♦ Aerosol cans should be punctured in a safety device: o Collect the residue; manage as potentially hazardous waste. o Punctured empty cans may be recycled under the scrap metal exemption (if your scrap recycler takes them). ♦ Un-punctured cans are considered reactive waste and therefore should be disposed of as hazardous waste.
Antifreeze: ♦ Propylene glycol (usually pink) ♦ Ethylene glycol (usually green) Contact your waste hauler to confirm that they will accept mixed antifreeze.	♦ Recycle ♦ Hire a waste hauler to collect and dispose. ♦ Purchase an on-site recovery unit. Distillation systems are more expensive than filtration systems but are more efficient at renewing used antifreeze.
Batteries - Lead (encourage the use of maintenance free batteries)	♦ Recycle. Store on an impervious surface, under cover. Protect from the rain. Check frequently for leakage. ♦ Automotive batteries are exempt if recycled. ♦ Other batteries should be labeled as universal waste. ♦ If not recycled, batteries containing acid and heavy metals are hazardous waste.
Containers • Paint cans • Buckets • Spent caulking tubes	♦ Cans may be put in trash can as long as: o All material that can be removed has been. (For example, in a 55-gallon drum, no more than 1" of residue remains on the bottom or inner liner.) o Containers that held compressed gas are at atmospheric pressure. o Containers that held acute hazardous waste have been triple rinsed with the appropriate (as listed on the container) solvent. Properly dispose of the solvent.
Flares – Expired Distress Signals	♦ Encourage boaters to keep onboard as extras. ♦ Store in well marked, fire safe container. Use expired flares to demonstrate to boaters how they are used. Be sure to notify the Coast Guard and fire department ahead of time. ♦ Encourage boaters to bring flares to a local fire department or household hazardous waste collection program. If disposed of, the flares are hazardous waste.
Gasoline - Stale	♦ Add stabilizer in the winter to prevent gasoline from becoming stale, or add octane booster in the spring to rejuvenate it. Use the fuel. ♦ Mix with fresh fuel and use. ♦ Transport as non-hazardous waste if picked by a fuel blender to be used as fuel. ♦ Hire a hazardous waste hauler to collect and dispose of it.

Glue and Liquid Adhesives	♦ Catalyze and dispose of as solid waste.
Kerosene	♦ Filter and reuse for as long as possible, then recycle.
Light Bulbs • Fluorescent bulbs • Mercury vapor lamps • High-pressure sodium vapor lamps • Low-pressure sodium vapor lamps • Metal halide lamps	♦ Recycle if you have more than a few. ♦ These are considered universal waste if recycled. Label as universal waste and insure that light tubes do not break. If not recycled, these materials may be hazardous waste
Mineral Spirits	♦ Filter and reuse. (DO NOT add to used oil to be burned in space heaters) ♦ If reuse not possible, then dispose of as hazardous waste
Oil – Non-terneplated Filters	♦ Puncture and completely hot drain for at least 24 hours. Recycle the oil and the metal canister. ♦ If you do not recycle the canister, double-bag it in plastic and place it in your regular trash.
Oil – Quart Cans	♦ Drain completely and dispose in regular trash. They cannot be recycled.
Oil – Terneplated Filters (used in heavy equipment and heavy-duty trucks)	♦ Dispose of as hazardous waste (contains lead).
Oil – Used Absorbent Material	♦ If oil and diesel is adequately absorbed, discard in trash. ♦ If it is saturated with gasoline, allow it to air dry and reuse.
Oil – Waste Oil: ♦ Engine oil ♦ Transmission fluid ♦ Hydraulic oil ♦ Gear oil ♦ #2 Diesel ♦ Kerosene	♦ Recycle with a registered used oil transporter. ♦ Use waste oil for space heating in approved used oil burner ♦ Take small quantities to household hazardous waste/CEG collection events. ♦ Contact your waste hauler to confirm that they will accept mixed oil.
Paint Brushes	♦ Allow to dry completely. Dispose in regular trash or, if paint contains heavy metals above regulatory levels, treat as hazardous waste.
Paints and Varnishes ♦ Latex ♦ Water-based ♦ Oil-based	Water-based: ♦ Allow to dry completely. Dispose of in regular trash. Oil/Solvent Based: ♦ Dispose of as hazardous waste. Water Based and Oil Based: ♦ Use leftover material for other projects, i.e., as an undercoat for the next boat. ♦ Encourage tenants to swap unused material.
Pesticide Containers	♦ Must be rinsed – use rinsate as makeup for next batch of pesticide if possible or spray it out through sprayer. Unrinsed containers are either hazardous waste or universal waste.

Pesticides	♦ Use only as product label specifies. If disposed at a collection event or at hazardous waste facility unused pesticides may be a universal waste.
Pressure Washing Residue	♦ Dispose of as solid waste.
Rags Soaked with Hazardous Substances	♦ Use rag service and do not dispose of rags. Wring rags out over a waste solvent collection container and keep in covered container until ready for pickup by an industrial laundry. Dispose of the solvent that collects in the bottom of the container as hazardous waste. ♦ If rag service is not used, perform hazardous waste determination and dispose of as hazardous waste if appropriate.
Residue from Sanding, Scraping, and Blasting	♦ Evaluate this waste and document whether the residue is hazardous (e.g. does not contain metals or toxins). ♦ If it is not hazardous, dispose of as solid waste. ♦ If it contains metals, it is a hazardous waste or special waste and must be disposed of properly. ♦ If it contains tributyl tin it is a pesticide and considered a South Carolina State Hazardous Waste.
Resins – Epoxy and Polyester	♦ Catalyze and dispose of as solid waste as long as it dries hard and has no free liquids and facility is a conditionally exempt generator (CEG) of hazardous waste.
Scrap Metal	♦ Recycle.
Sludge Recovered from a Hazardous Solvent	♦ Dispose of as hazardous waste.
Sludge Recovered from a Non-hazardous Solvent	♦ Let sludge dry in a well-ventilated area, wrap in newspaper, and dispose of in garbage.
Solvents ♦ Paint and engine cleaners such as acetone and methylene chloride	♦ Reuse as long as possible and then recycle. ♦ Consider a distillation unit for recycling solvents. ♦ Use less toxic alternatives to avoid disposal issues. ♦ Dispose of as hazardous waste. DO NOT add to used oil to be burned in space heaters.
Used Bio-remediation Bilge Booms	♦ Discard in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.

Used Oil Management

What is Used Oil?

Used oil includes used crankcase (engine) oil, used liquid and semi-solid gear, chain, and ball bearing lubricants, and used hydraulic fluid. Materials that contain or are contaminated with used oil can also fall under the definition of used oil, such as used oil filters, oily rags and wipers, used absorbents, and oily wastewater.

Is it Hazardous?

Used oil is not considered hazardous waste unless it is mixed with a hazardous waste such as a chlorinated solvent. If used oil has been mixed with a hazardous waste, see Appendix B for management requirements.

How Should a Marina Manage the Used Oil it Generates?

Note that used crankcase oil, automatic transmission fluid, power steering fluid, and hydraulic fluid are all considered used oil and can be mixed and managed together.

There are a few options for managing used oil. Two of the most common are collecting it, testing it, and having it hauled away for recycling, or collecting it, testing it, and burning it in on-site space heaters. If the used oil tests positive for hazardous constituents, it must be managed as hazardous waste.

If the used oil does not test positive for hazardous waste, it should be managed as follows:

1. Collect and store used oil in a secure collection tank or drum, separate from other wastes.

2. Dispose of the used oil by hauling or burning it:

    - Contract with a permitted waste oil transporter to haul oil to a permitted recycling facility

    OR

    - Burn the used oil in space heaters for energy recovery, i.e., to heat your shop, providing the heater burns only used oil generated on-site or received from "do-it- yourself" oil changers.

        NOTE: Used oil heaters must:
        1. Have a maximum design capacity of not more than 0.5 million BTU's per hour; and
        2. Vent combustion gases outside the building; and
        3. Burn only used oil that you generate or that you have collected from your do-it-yourselfer customers.

What are the Requirements for Used Oil Storage in Tanks or Containers?

- Label the tank or container "Used Oil" [40 CFR 279.22(c); DHECR.61-107.279.22].
- Prepare a Spill Prevention, Control, and Countermeasures (SPCC) Plan if you store more than 1,320 gallons of used (or new) oil above-ground (containers of less than 55 gallons are exempt from the total) [40 CFR 112.1]. See Appendix E for more information.

What are the Recommended Practices for Used Oil Storage in Tanks or Containers?

- Place the tank or container on an impervious base. If the tank or container is outdoors, you must provide for secondary containment equal in volume to the capacity of the storage tank. If the tank or container is indoors, no secondary containment, device, or structure is required.
- Locate the tank or container in an aboveground area, preferably roofed, which will prevent unauthorized access or vandalism and minimize the possibility of fire or explosion and accidental release of oil to the environment.
- Lock the tank or container's fill spout when not in use.
- Visually inspect the tank or container on a regular basis for leaks or malfunctions. Maintain written inspection records.
- Instruct all employees who handle used oil on the proper operation and management of the oil storage area. Assign one person the responsibility for monitoring oil storage.
- Use kitty litter, saw dust, or a commercially available product to absorb oil from minor spills.
- If providing a collection tank or container for used oil from your customers who do their own engine maintenance, clearly label the tanks or containers to indicate the importance that ONLY used oil be placed in the tank. Remember that you'll be responsible to pay for disposal of used oil that is contaminated with hazardous waste.
- Keep records of used oil collection.

If a Marina Accepts Used Oil That Boaters Generate, How Should it be Managed?

Many marinas collect used oil from customers as a client service. Manage this oil in the same way as oil generated by the marina itself.

It may make sense to separate the waste area where you are collecting wastes from boaters from those generated by the marina, since you have more control over the wastes generated by your staff than by your clients. Used oil contaminated with a hazardous substance is much more costly to dispose of than unadulterated used oil. Educate your staff about the importance of keeping used oil from being contaminated with hazardous substances.

If you collect customers' oil, remind boaters NOT to:

- Mix used oil with antifreeze or hazardous waste, i.e. waste gasoline.
- Burn used oil in residential boilers or space heaters.
- Dump used oil overboard.
- Pour used oil into sewers or storm drains.
- Dump used oil on the ground; use it for weed control or to keep dust down.

Can Used Oil Be Mixed with Diesel Fuel, as Recommended by the Manufacturers of Some Diesel Engines?

The manufacturers of certain diesel engines recommend that you add used oil to your diesel fuel. If you have a diesel engine of this type, you may mix your used oil with virgin diesel fuel according to the manufacturer's instructions. However, up until the point that the used oil is actually mixed with the diesel fuel, it must be handled exactly the same as any other used oil.

Please note that this exemption applies only to your used oil and only if it is used in your own diesel engines. You may not add your used oil to diesel fuel that will be used in someone else's diesel engines. You may also not accept used oil from someone else to put into your diesel fuel.

How Should Used Oil Absorbent Material Be Disposed?

Materials that *contain* or are *contaminated with* used oil can also fall under the definition of used oil. The most common of these materials are used oil *absorbent pads*, *rags and wipers*, and *absorbents* (such as kitty litter, speed-i-dri, and absorbent pads).

Marina staff that produce waste oil absorbent material as a result of maintenance of marina-owned or customer's vessels in the marina's maintenance shop, must collect all used oil absorbent material, test for hazardous constituents and transport either as hazardous waste or used oil, depending on the test results. However, if the absorbents do not have free-draining oil and are not going to be burned for energy recovery, they are no longer subject to regulation as used oil. In this case, these soaked absorbents must have a hazardous waste determination and be disposed of as hazardous waste (see Appendix B) or double-bagged and discarded in trash, as appropriate.

Boaters or marina staff doing work on customers' boats dockside can dispose of oil absorbent materials generated while conducting maintenance by bringing the absorbent to a collection area provided by the marina. Boaters can also take their waste oil absorbents to a household hazardous waste collection facility for disposal. If the absorbent does not have free-draining oil and no such collection area is available, boaters may double-bag it and dispose of it in the regular trash.

Are There Any Other Requirements?

On-board air conditioning systems may also generate used oils that are contaminated with refrigerants (such as freon). This type of used oil must be recycled for its freon content. See section on "Refrigerants" for more information.

Spills of used oil (or any other petroleum liquids, chemicals, or hazardous waste) must immediately be reported via the SCDHEC Emergency Response Section at 1-888-481-0125 or 1-800-452-0311 and to the National Response Center at 1-800-424-8802.

Determining the Type of Sewage Collection/Disposal Required for Vessels

	Recreational Boats, Houseboats	Live-a-boards (stationary)	Boathouses, Combos	Commercial Vessels
Operating in Federal Navigable Waters	MSD Type I, II or III. Type I or II, discharge allowed.	N/A	N/A	MSD Type I, II or III. Type I or II, discharge allowed.
Operating in Sole State Waters	MSD Type III. **No overboard discharge allowed.**	N/A	N/A	MSD Type III. **No overboard discharge allowed.**
Moored in State Waters	MSD Type III. **No overboard discharge allowed.**	MSD Type III, upland restrooms, or dockside connection. **No overboard discharge allowed.**	Dockside sewage connection	MSD Type III or dockside sewage connection. **No overboard discharge allowed.**

NOTE: The overboard discharge of sewage from a Type III MSD to Federal Navigable Waters or to Waters of the State is ALWAYS PROHIBITED.

NOTE: Federal Navigable Waters are within 3 miles of the shore.

Estimating the Appropriate Number of Boat Waste Collection Devices for your Marina

Instructions
Use Step 1 to estimate the number of boats with portable toilets and Type III holding tanks present at your marina. Then use Step 2 with information from Step 1 to determine the number of boat pumpouts or portable toilet dump stations appropriate for your marina.

Step 1

A. *If the number and type of boats with Type III MSD holding tanks and portable toilets is known, skip to Step 2.* Determine the total number of boats by overall length. Include unoccupied slips by length of slip. Include all slips, annual and seasonal boats, weekly and transient (guest) boats and houseboat units. Count live-a-boards separately. Use the boat length categories provided in the following example to keep track of your count.

Example: The following table lists the number of boats in each length category and their type moored at Marina X. These numbers will be used in Step 1B.

Table 1: Number of Boats at Marina X

Boat Length Category	# of Annual, Seasonal and Transient Boats	# of Live-a-board Boats
Less than 16 ft.	**50**	**0**
16 to 26 ft.	**100**	**10**
26 to 40 ft.	**100**	**10**
Over 40 ft.	**20**	**10**

B. To estimate the number of boats with portable toilets and Type III holding tanks in your marina, use the following percentages. An example also follows.

Table 2: % of Portable Toilets and Type III Holding Tanks Based Boat Counts

Boat Length Category	Portable Toilets	Type III Holding Tanks
Less than 16 feet	0%	0%
16 to 26 ft.	25%	0%
26 to 40 ft.	0%	75%
Over 40 ft.	0%	100%

Example: Using the numbers provided from Marina X in Step 1A, one should expect to find around 25 boats with portable toilets for annual, seasonal and transient boats (see the following table). Do these same calculations for estimating the number of annual, seasonal and transient boats with Type III holding tanks and repeat the calculations for live-a-boards.

Table 3: Number of Boats at Marina X with Portable Toilets

Boat Length Category	# Boats × % Portable Toilets ÷100 = # of Boats w/Portable Toilets				
Less than 16 feet	50	× 0	÷ 100	=	0
16 to 26 ft.	100	× 25	÷ 100	=	25
26 to 40 ft.	100	× 0	÷ 100	=	0
Over 40 ft.	20	× 0	÷ 100	=	0
TOTAL					**25**

Step 2

To determine the total number of boat waste collection devices [portable toilet dump stations and pumpouts (stationary or portable)] required at your marina use your boat counts and the tables below.

A. Determine the number or devices needed for annual, seasonal and transient boats. *Note: Adjustments may be made to number of pumpouts required to account for any dockside sewage connections, mobile pumpout service, etc.*

Table 4: Number of Boat Dump Stations and Pumpouts REQUIRED for Annual/Seasonal and Transient Boats

IF MARINA HAS # of Boats w/Portable Toilets (actual count or estimate from Step 1B)	**THEN: # of Boat Dump Stations Required**
less than 25	None*
25 to 300	1
300 to 600	2
over 600	3 plus 1 for each 300 boats

IF MARINA HAS: # of Boats w/Type III Holding Tanks (actual count or estimate from Step 1B)	**THEN: # of Boat Pumpouts Required**
less than 25	None*
25 to 300	1
300 to 600	2
over 600	3 plus 1 for each 300 boats

* Only applicable to marinas with small numbers of boats with Type III MSD's that jointly "share" (within 2 mile radius) a pumpout or dump stations open for public use.

Example: From Step 1, Marina X has estimated that they have 25 annual, seasonal and transient boats with portable toilets. According to Table 4, they need at least 1 boat dump station, but they still have to calculate the number of boat pumpouts needed for the annual, seasonal and transient boats, and the number of dump stations and pumpouts needed for the live-a-boards.

B. Determine the number or devices needed for live-a-board boats
Note: Adjustments may be made to number of pumpouts required to account for any dockside sewage connections, mobile pumpout service, restrooms, etc.

Table 5: Number of Boat Dump Stations and Pumpouts REQUIRED for Live-a-board Boats

IF MARINA HAS: # of Boats w/Portable Toilets (actual count or estimate from Step 1B)	**THEN: # of Boat Dump Stations Required**
1 to 25	1
25 to 50	2
Over 50	3 plus 1 for each 25 boats

IF MARINA HAS: # of Boats w/Type III Holding Tanks (actual count or estimate from Step 1B)	**THEN: # of Boat Pumpouts Required**
1 to 25	1
25 to 50	2
Over 50	3 plus 1 for each 25 boats

Add the numbers from Steps 2A and 2B for your total number of waste collection devices required at your marina.

Spill Prevention, Control, and Countermeasure Plans

The Federal Clean Water Act requires facilities that store any kind of oil in certain volumes to prepare and implement Spill Prevention, Control, and Countermeasure (SPCC) Plans to prevent the discharge of oil from a facility into navigable waters or adjoining shorelines. SPCC Plans require that your facility have adequate containment, such as berms and dikes around aboveground fuel tanks, to protect the soil and water in the event of a spill [40 CFR 112].

SPCC Plans are federal requirements administered by the U.S. Environmental Protection Agency (EPA).

Does Your Marina Require a SPCC Plan?

Your facility needs to develop a SPCC plan if it does any of the following:

- Stores oil above ground in any size tank(s) with a total aggregate volume over 1,320 gallons (containers of less than 55 gallons and/or permanently closed storage tanks are exempt from the total);

OR

- Stores oil below ground in any size tank(s) with at total aggregate volume of 42,000 gallons (except for tanks that are compliant with the state requirement for Underground Storage Tanks);

AND

- Could reasonably be expected to discharge oil to a "navigable water of the United States" or "adjoining shorelines" considering a possible worst-case scenario. (This criterion applies to just about every marina in the state, since a facility cannot take into consideration any man-made impediments to the flow of oil.)

NOTE: "Oil" is defined in Section 311(a)(1) of the Clean Water Act as "oil of any kind or in any form including, but not limited to, petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil." EPA interprets this definition to include crude oil, petroleum, and petroleum-refined products, as well as non-petroleum oils such as vegetable and animal oils.

NOTE: "Navigable waters" are broadly defined under the Clean Water Act and the Oil Pollution Act to include all waters that are used in interstate or foreign commerce, all interstate waters including wetlands, and all intrastate water including wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds.

- A registered Professional Engineer, not the facility management, must make a determination that a SPCC Plan is not necessary for a facility.

What is an SPCC Plan?

A SPCC Plan outlines a facility's oil containment systems and procedures to prevent an oil spill. It also outlines oil spill response and cleanup protocols.

Each SPCC Plan is site specific, but must address the following:

- Operating procedures that prevent oil spills;
- Control measures installed to prevent a spill from reaching the environment; and
- Countermeasures to contain, clean up, and mitigate the effects of an oil spill that reaches the environment.

Who Writes an SPCC Plan?

The facility can prepare the plan but a Registered Professional Engineer must certify the plan.

Is There a Particular Form or Format for the SPCC Plan?

The EPA does not expect any two plans to look alike. However, at a minimum, all plans must include:

- Facility layout and drainage patterns;
- List of all oil storage tanks and areas;
- Quantities of oil that could be released, with predicted path of flow and flow rate;
- Procedures for receiving oil from the supplier, transfer of oil within the facility, end point uses of the oil, and waste oil disposal;
- Effects of a spill at the facility, fire hazards, employee evacuation, customer/neighbor considerations, press relations;
- Capacity of required secondary containment devices;
- Clean-up procedures, including use of in-house staff versus contractors;
- Notification list – Name(s) and phone numbers of in-house management, remote management, fire and police, municipal, state and federal agencies requiring notification;
- Facility security for prevention of internal sabotage and external vandalism;
- Employee training for spill prevention, oil handling, and spill clean-up; and
- OSHA considerations.

Where Should the SPCC Plan be Located?

REQUIRED: A copy of the SPCC plan must be maintained at any facility manned at least 8 hours per day. For remote locations, the SPCC plan should be filed at the nearest field office. A copy does not have to be filed with the EPA or any other agency unless it is a condition of a permit or license held by the facility. However, the SPCC plan must be available during normal business hours for review by an EPA inspector. The EPA requires that facilities submit a copy of the SPCC plan to EPA Region 10 if a single spill of greater than 1,000 gallons occurs or if two discharges of 42 gallons or more occur within one year.

All employees must be made aware of the SPCC plan. It is highly recommended that you post copies of the plan in plain view at oil storage locations.

Does a SPCC Plan Need to be Reviewed and/or Updated?

- The plan has to be reviewed at least once every five years. You must keep records of these reviews. An example of such documentation is "I have completed review and evaluation of the SPCC plan for (name of facility) on (date), and will/will not amend the plan as a result (signature)".
- The plan must be amended when:
    - There are changes in facility design, construction, operation, or maintenance that materially affect the facility's potential for the discharge of oil or
    - There are two or more spills in 12 months or one spill of 1,000 gallons.
- A Registered Professional Engineer must certify only technical changes to the SPCC plan. Non-technical amendments include personnel or contact information changes.

Who Cares if My Facility Does Not Have a Plan?

- Company management. Having measures in place to prevent spills is cost effective, since spill cleanup can be costly. However, when a plan is in place, spill cleanup can be more efficient, more effective and less costly than if there is no course of action.
- The U.S. EPA. The penalty of failure to have a SPCC Plan can be up to $27,500 per day of violation (up to a maximum of $137,500) if an administrative action is filed. The EPA performs random, unannounced inspections of facilities suspected of needing a SPCC Plan.

If There is a Spill, What Could I be Held Responsible for?

- Removing the material from public property. Cleaning of highways, waterways, storm drains, bridge abutments, etc.
- Removing the material from private property, such as boat hulls and parking lots.
- Paying for natural resources damages (lost parking receipts at public beaches; lost revenues from fishing licenses; replacing killed fish, shellfish, and waterfowl).
- Paying for lost livelihood wages of fisherman and shell fisherman, devaluation of property for sale. Private suits.
- Civil penalty for spilling into a water of the U.S.
- Criminal penalty if you fail to notify the federal authorities. State agencies and contractors have no responsibility to notify for you.

For more information about the federal SPCC program, visit www.epa.gov/oilspill/spcc.htm.

Although the following problems are serious, they are not considered a spill or release. Do not report the situations below to the Emergency Response Team. These calls are better handled during business hours.

1. Health related calls:
- Dead birds (West Nile Virus)
- Food-related problems
- Medical problems, (i.e., mold, allergies, asthma) unless related to a spill or release
- Dead animals (DHEC does not bury or dispose)
- Septic tank concerns

2. Environmental Quality Control calls:
- Sewer overflows (First contact the responsible utility. If the utility does not respond, contact DHEC's emergency response number.)
- Residential open burning of leaves and limbs
- Swimming pool complaints

DHEC is concerned with all aspects of public health and environmental protection, including surface and ground water pollution, air pollution, solid waste, and drinking water protection. By immediately reporting spills and releases, you're helping to ensure the protection of your environment and the public.

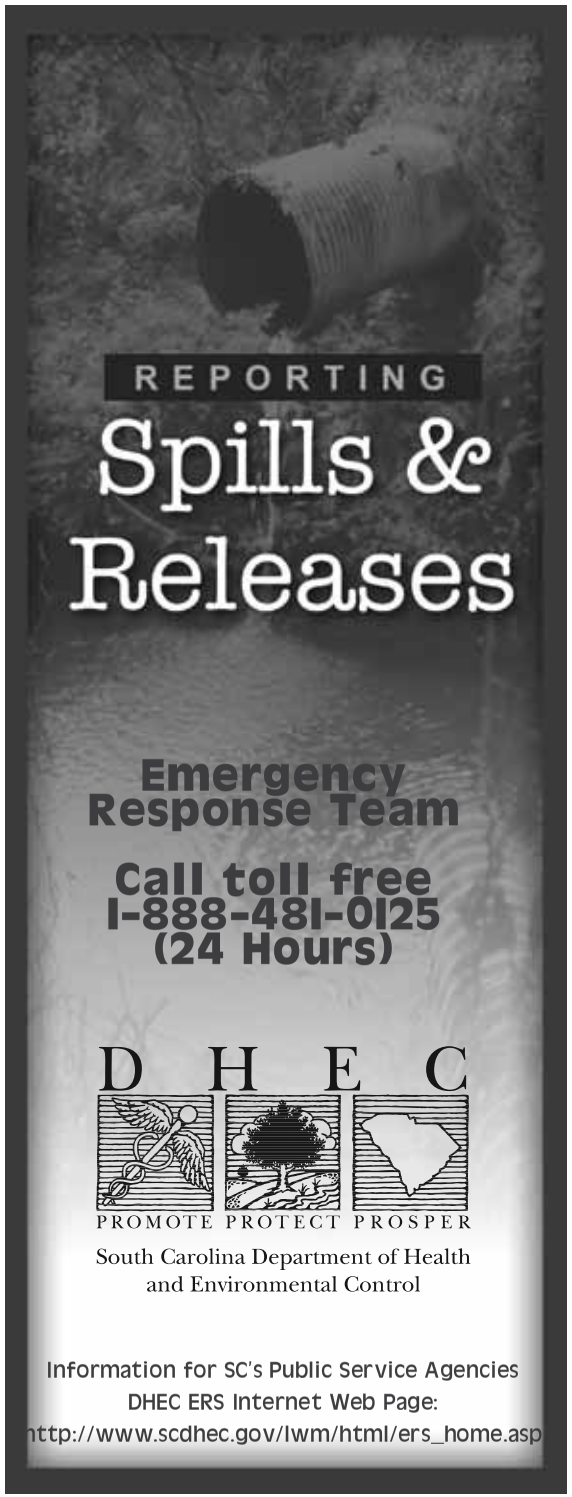
CR-003426 12/04

Statewide number for urgently reportable diseases or health-related consultations

Statewide Emergency Answering Service
1-888-847-0902

Call this number to report:
- Animal bites and rabies concerns
- Suspicious packages (i.e., powder or Anthrax)
- Reportable Conditions (i.e., diptheria, Rubella, measles, mumps, yellow fever)
- Diagnostic Laboratory Response to Bioterrorism and Disease Outbreak: Specimen collection and transportation, specimen testing, and test result interpretation
- Bioterrorism concerns

Learn more about DHEC:
http://www.scdhec.gov



REPORTING

Spills & Releases

STATE LAWS REQUIRE REPORTING OF SPILLS AND RELEASES THAT MAY IMPACT PUBLIC HEALTH OR THE ENVIRONMENT

What are spills and releases?

Spills and releases occur when a petroleum product or a hazardous substance is accidentally or deliberately spilled, emitted, dumped, abandoned, or otherwise mishandled and introduced into the environment.

What needs to be reported?

Report spills and releases of:

- Petroleum products
- Hazardous substances
- Chemicals
- Substances that could affect the public or the environment
- Fish kills

Who must report?

Anyone responsible for a release (producer, user, transporter, distributor, or property owner) must make a report, under various state laws and regulations.

Who may report?

Anyone observing or having knowledge of a spill, release, or other reportable event may make a report.

When should you report?

A spill or release should be reported immediately after it is discovered.

Where should you report?

Report to the South Carolina Department of Health and Environmental Control Emergency Response Team at 1-888-481-0125 (toll free, 24 hours a day).

Report spills and fish kills to DHEC:
1-888-481-0125 *(toll free)*

Statewide number for urgently reportable diseases or health-related consultations
(Available 24/7, you must specify the county)
1-888-847-0902 *(toll free)*

Report spills to the Federal Government:
National Response Center
1-800-424-8802 *(toll free)*

ERT Responds For DHEC

The Emergency Response Team (ERT) in Columbia receives reports of releases 24 hours a day. The information is then immediately relayed to the appropriate DHEC Environmental Quality Control (EQC) district office. From the district office, a member of the Emergency Response Team will respond and coordinate DHEC activities.

After hours, the SC Emergency Management Division's Warning Point will take the basic facts from you and contact the DHEC Emergency Response Team. The ERT Duty Officer will contact you for more details as soon as possible.

When you call, be ready to give:

- Your name and return phone number
- Location of incident with directions
- Substance spilled or released
- Source of the spill or release
- Estimate of the quantity released
- Time of the release and the medium in which the release occurred (soil, water, air)

When you call, be ready to answer:

- Is the scene controlled? (i.e., Has access to area been restricted? Is traffic being detoured? Has an evacuation of area residences begun?)
- Is the spill contained?
- Has the spill escaped into surface waters, drainage ditches, sewers, storm drains, etc.?
- Who is potentially responsible for the product and its release?

NPDES Storm Water Regulations

Phase I Program. The National Pollutant Discharge Elimination System (NPDES) Stormwater Program was created by the October 1990 amendments to the federal NPDES regulations. These amendments are also known as the Phase I Stormwater NPDES regulations. These regulations define certain stormwater discharges as point sources subject to the NPDES permit program. There are two broad areas of stormwater point sources as follows:

1. Stormwater Discharges Associated with Industrial Activity, and
2. Municipal Separate Storm Sewer Systems (MS4s).

The "Stormwater Discharges Associated with Industrial Activity" area is divided into eleven categories of industrial activity. The eleven categories include industrial manufacturing facilities, landfills, transportation facilities, construction (land clearing on five or more acres), etc. without regard to type of owner. Therefore, a municipal or county government may own and operate a facility or site classified as an industrial activity. Based on population, MS4s are divided into three categories: large (250,000 or greater); medium (less than 250,000 but equal to and greater than 100,000); and small (less than 100,000).

The Phase I Stormwater NPDES regulations require large and medium MS4s and all categories of discharges associated with industrial activity to obtain stormwater NPDES permits. However, the federal 1991 Intermodal Surface Transportation Efficiency Act (ISTEA) temporarily exempted those industrial activities (except for power plants, airports, and uncontrolled sanitary landfills) operated by municipalities with a population of less than 100,000. The Phase II regulations now require the ISTEA facilities to have a stormwater NPDES permit and established March 10, 2003 as the application deadline these facilities. Also, facilities in category xi are exempted from the program if their stormwater is not exposed to pollutants. However, under the Phase II regulations discussed below, category xi facilities that were exempted in Phase I by a self determination of "no exposure" must now submit the "No Exposure" certification form to the Department to remain exempt.

Phase II Program. The federal NPDES regulations were amended again for stormwater discharges in December 1999. These amendments lower the acreage for when an NPDES permit is required for construction or land clearing to one acre while allowing a case-by-case determination for sites less than one acre. These are called Small Construction Sites. Also, small MS4s located in urbanized areas (typically areas with a population of 50,000 or more) must obtain an NPDES permit. Further, in the Phase II Stormwater Program, the "No Exposure" exemption of the program is expanded to all categories of industrial activity except construction (category x). To qualify for this exemption, a "No Exposure" certification form must be submitted. Additionally, existing municipal owned industrial activities that were exempted by the federal 1991 Intermodal Surface Transportation Efficiency Act were required to submit an application by March 10, 2003. These requirements went into effect March 10, 2003 and are known as the Phase II Stormwater NPDES regulations. The Department has adopted the 1999 regulation amendments (Phase II program) and these requirements are now effective in SC.
There has been a lot of misunderstanding or misinformation by the regulated community in regards to the Regulated Small MS4 Program. To address this issue, the Department has prepared a "Fact Sheet" which gives a brief overview of the MS4 Program and a list of the Regulated Small MS4s in SC. Also, the Department has received a lot of comments about the MS4 Program being an unfunded mandate from the federal government and the Department. While it is true that

neither the US Congress nor the EPA provided direct funding for this program to the State Permitting Authorities and the regulated communities throughout the nation, the EPA, as required by the Federal Unfunded Mandates Reform Act of 1995, did address this issue in the preamble to the Phase II stormwater regulations.

SC's Program. SC, as a delegated NPDES state since 1975, administers the NPDES permit program on behalf of EPA. This delegation includes the NPDES Stormwater Program. The Bureau of Water's Industrial, Agricultural, and Stormwater Permitting Division administers this permitting program. SC issued two general NPDES stormwater permits that cover all 11 categories of stormwater discharges associated with industrial activity. One general permit is for all industrial categories except construction and the other general permit covers construction. Since the construction activity and MS4 components of the NPDES Stormwater Program overlap with the State Sediment, Erosion, and Stormwater Management Program, these programs have been administratively merged to the extent allowed by law to minimize duplication. The Department has modified it's program to comply with the new Stormwater Phase II program requirements.

The EQC District Offices are responsible for the fieldwork associated with the NPDES Stormwater Program. This includes inspections and complaint investigation to ensure compliance by owners of MS4s and all facilities and sites categorized as "Associated with Industrial Activity." Enforcement actions are used by the Bureau when necessary to ensure proper approvals are obtained and to ensure compliance with the NPDES permits.

Contacts

- Permitting
    - Industrial Activity Except Construction
        - Andy Yasinsac
    - Construction Activity
        - Ann Clark
    - MS4s
        - Rick Nuzum
        - Arturo Ovalles
- Inspections and Compliance
    - EQC Local District Offices (http://www.scdhec.gov/environment/envserv/regions.htm)
    - Glenn Trofatter
- Enforcement
    - Doug Kinard
    - Robin Foy

Outreach and Education
Bureau and District Staff are available to give talks and presentations on the different aspects of the NPDES Stormwater Program. Please send an E-mail to one of the contacts listed above if you are interested in arranging a presentation for a group or class.

Also, the Bureau's Nonpoint Source Control Program which is a voluntary (non regulatory) program conducts numerous outreach and educational activities.

Related Links
Links to non-DHEC organizations found at this site are provided solely as a service to our users. The links do not constitute an endorsement of these organizations or their programs. DHEC is not responsible for the content of the individual web pages found at these links.

- DHEC
    - Sediment, Erosion, and Stormwater Management Program (http://www.scdhec.gov/water/html/erfmain.html)
    - Nonpoint Source Control Program (http://www.scdhec.gov/eqc/water/html/npspage.html)
- U. S. Environmental Protection Agency
    - Contacts (http://cfpub1.epa.gov/npdes/contacts.cfm?program_id=6&type=ALL)
    - EPA Stormwater Page (http://cfpub1.epa.gov/npdes/home.cfm?program_id=6)

Suggested Contract Language Sample

FOR TENANTS:

I,_____, understand that _____
(name) (marina/boatyard)

subscribes to and enforces pollution prevention procedures. I further understand and agree that in return for the privilege of performing work on a boat at this facility such as hull cleaning, washing, sanding, polishing and/or painting; bottom cleaning, sanding, scraping, and/or painting; opening the hull for any reason, e.g., installation of equipment or engine work; engine and/or stern drive maintenance, repair, painting; etc., **it is my responsibility to comply with, at a minimum, the following pollution prevention practices.** I understand that this list may not be complete and pledge that I will exercise common sense and judgment in my actions to insure that my activities will not deposit pollution residues in surface waters or elsewhere where they may be conveyed by stormwater runoff into the surface waters. I understand that failure to adopt pollution prevention procedures may result in expulsion from the marina/boatyard *(insert name of facility)* and forfeiture of rental fees. I understand that I may elect to employ the facility to perform potential pollution producing activities on my behalf in which case the responsibility for compliance with the best management practices is entirely theirs.

Signed _____ Date _____

FOR SUB-CONTRACTORS ONLY:

I understand and agree to have my proposed work first authorized by this facility and that I will adhere, at a minimum, to the contents of this document. I further understand that because of the nature of my proposed work, the facility may require that I be supervised by an employee of said facility for which I will pay the normal existing labor rate.

Signed _____ Date _____

POLLUTION PREVENTION PRACTICES:

REPAIRS AND SERVICE (to hull and engine: painting, cleaning, washing, sanding, scraping, etc.)

1. Work on hulls and engines only in designated areas or use portable containment enclosures with approval of marina management.
2. Use tarps and vacuums to collect solid wastes produced by cleaning and repair operations, especially boat bottom cleaning, sanding, scraping, and painting.
3. Conduct all spray painting within an enclosed booth or under tarps.
4. Use non-toxic, biodegradable solvents.
5. Capture debris from boat washing and use only minimal amounts of phosphate-free, non-toxic, and biodegradable cleaners.
6. Use drip pans for any oil transfers, grease operations, and when servicing I/Os and outboard motors.
7. Obtain management approval before commencing any repair, which will open the hull. Clean and pump bilges free of contaminated materials before and after repairs that open the hull.
8. Use spill proof oil change equipment.

VESSEL MAINTENANCE WASTE

1. Non-toxic residue of sanding, scraping, and grinding: bag and dispose of in regular trash.
2. Toxic and non-environmentally safe solvents and cleaning liquids: seek specific directions from marina management or dispose of with licensed agency.

FUEL OPERATIONS

1. Install fuel/air separator on fuel tank vent line(s) to prevent overflow of fuel through vent.
2. Keep petroleum absorbent pad(s) readily available to catch or contain minor spills and drips during fueling.

WASTE OIL AND FUEL

1. Recycle used oil and antifreeze.
2. Add a stabilizer to fuel tank in the fall or an octane booster to stale fuel in the spring. Use the fuel or bring it to a household hazardous waste collection site.
3. Absorbent materials soaked with oil or diesel: drain liquid and dispose of in used oil recycling container; double bag absorbent material in plastic and dispose in regular trash receptacle.
4. Absorbent materials soaked with gasoline (flammable): air dry and reuse.
5. Bio-remediation absorbent products: dispose in regular trash as long as no liquid is dripping. Because the microbes need oxygen to function, do not seal in plastic.
6. Oil filters: drain and recycle the oil; recycle the filter or double bag and put in regular trash.

ONBOARD PRACTICES

1. Maintain oil absorbent pads in bilge. Inspect no less than annually.
2. Do not discharge bilge water if there is sheen to it.
3. Use only low-toxic antifreeze (propylene glycol). Recycle used antifreeze (even low-toxic antifreeze will contain heavy metals once it has been used).

SEWAGE HANDLING

1. Never discharge raw sewage within Maryland waters.
2. If you have an installed toilet, you must have an approved Marine Sanitation Device (MSD).
3. Do not discharge Type I or Type II marine sanitation devices within the marina basin.
4. Use marina restroom facilities when at slip.
5. Do not empty port-a-pots overboard; use marina dump facility. Do not empty port-a-pots in the restrooms.
6. Do not discharge holding tanks overboard; use pumpout facility.
7. If you must use a holding tank additive, use an enzyme-based product. Avoid products that contain quaternary ammonium compounds (QACs), formaldehyde, formalin, phenal derivatives, alcohol bases, or chlorine bleach.
8. Live-a-boards, place a dye tablet in holding tank after each pumpout out. The dye will make any illegal discharges clearly visible.

ORGANIC WASTE

1. Clean fish only in designated areas.
9. Grind, compost, or double bag fish scraps (depending on the services offered by your marina).
10. Walk pets in specified areas and dispose of their wastes, double-bagged, in the dumpster.

SOLID WASTE

1. Recycle plastic, glass, aluminum, newspaper, and used lead batteries (tailor this section to fit your facility's practices).
2. Place trash in covered trash receptacles; replace covers.

This section presents an overview of some relevant laws and regulations that apply to marinas and boaters. The information presented in this section is not comprehensive. Some of these laws and regulations are discussed in greater detail throughout this guidebook. In addition to the environmental laws and regulations discussed below there may be local environmental codes or requirements. When storing hazardous substances, please check with your local fire department and building department regarding storage and handling requirements.

Federal/State Agencies that Regulate Environmental Issues at Marinas

- **Environmental Protection Agency (EPA)** is responsible for ensuring environmental protection federally and delegates certain environmental compliance programs to the state.
- **United States Army Corps of Engineers (ACOE)** builds structures for flood control, manages hydropower structures, maintains navigation channels, is responsible for dredging oversight, and is concerned with providing protection to wetlands and fish and wildlife habitat.
- **United States Coast Guard (USCG)** is an arm of the U.S. Department of Transportation that protects the public, the environment, and U.S. economic interests. They are responsible for responding to spills on the water and for enforcing regulations affecting aquatic mammals.
- **South Carolina Department of Health and Environmental Control, (SCDHEC))** is dedicated to promoting and protecting the health of the public and the environment in the State of South Carolina. SCDHEC is responsible for administering delegated federal environmental laws and regulations regarding Municipal Solid Waste Landfill Program, water quality, and hazardous waste management discussed in the subsection below entitled F*ederal Laws and Regulations*. In addition, they administer the laws and regulations unique to South Carolina that are discussed in the subsection below entitled *Additional State Laws and Regulations*.
- **The South Carolina Department of Natural Resources (SC DNR)** registers boats and provides boating safety education and funding for recreational facilities associated with recreational boating such as launch ramps, sewage pump-out stations, restrooms, and parking lots. They are also responsible for protecting South Carolina's fish and wildlife, their habitat, and for the enforcement of fishing and wildlife laws and responding to emergencies.

Federal Laws and Regulations

Litter Laws on The Water

THE REFUSE ACT OF 1899
The Refuse Act of 1899 prohibits throwing, discharging, or depositing any refuse matter of any kind (including trash, garbage, oil and other liquid pollutants) into the waters of the United States.

ANNEX V OF MARPOL (MARINE POLLUTION) 1973, 1978
This international law prohibits dumping plastic refuse and garbage mixed with plastic into any waters and restricts dumping of other forms of garbage. It is illegal to dump plastic, dunnage, lining or packing materials that float, or any garbage within 25 miles of an ocean shoreline and in U.S. lakes, rivers, bays, and sounds.

THE FEDERAL WATER POLLUTION CONTROL ACT (THE CLEAN WATER ACT)
The Clean Water Act prohibits the discharge of oil or hazardous substances into U.S. navigable waters. All vessels greater than 26 feet must display a MARPOL placard outlining the garbage dumping restrictions. All vessels over 40 feet must also have a written waste management plan on board.

The use of soaps or other harmful dispersing agents to dissipate oil is prohibited [40 CFR 110.4].

Ports and terminals, including recreational marinas, must have adequate and convenient reception facilities for their regular customers. That is, marinas must be capable of receiving garbage from vessels that normally do business with them (including transients).

The Clean Water Act prohibits the discharge of oil or oily waste into or upon the navigable waters of the United States or the waters of the contiguous zone if such discharge causes a film or sheen upon, or discoloration of, the surface of the water. Discharges that cause a sheen on the water must be reported to the Coast Guard's National Response Center (1-800-424-8802) and to the SCDHEC Emergency Response Section at 1-888-481-0125.

Sewage Laws on the Water

SECTION 312 OF THE CLEAN WATER ACT
All vessels with an installed toilet must have a certified Marine Sanitation Device (MSD) attached. The direct discharge of sewage from a vessel is not permitted in virtually any inland bodies of water. Most recreational boats equipped with an MSD will have a Type III MSD – which is a holding tank. The holding tank cannot be emptied in waters of the United States. Sewage pumpouts are available at Ports and large marinas. Larger vessels have Type I or II MSDs.

NONPOINT SOURCE DISCHARGE
The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) Chapter 5 sets out pollution prevention guidelines for marinas and recreational boaters. The Amendments require that non-point source pollution from marinas be contained.

Spill Plans

Under 40 CFR 112, any boating facility with an aboveground petroleum tank with an aggregate aboveground petroleum storage greater than 1,320 gallons, or total underground storage capacity greater than 42,000 gallons must have a Spill Prevention, Control and Countermeasure (SPCC) Plan. A professional engineer must certify that there is adequate containment, training, and emergency response equipment to prevent spills and releases of oil.

Hazardous Waste Regulations

The Resource Conservation and Recovery Act requires businesses that generate waste to determine if their waste is hazardous. This is referred to as making a hazardous waste determination. Wastes that are ignitable, corrosive, reactive, toxic, or listed are considered hazardous and face additional restrictions on disposal and management. Additional requirements are in place for facilities that generate greater than 220 pounds of hazardous waste or 2.2 pounds of acutely hazardous waste per month.

Used Oil

Under DHEC R.61-107.279, used oil that is recycled is subject to less stringent regulations than hazardous waste. Containers of used oil must be labeled "used oil." Spills of used oil must be cleaned up immediately and wastes properly characterized and disposed. Used oil may be hauled off site for recycling by registered used oil transporters.

Habitat Protection

The 1973 Endangered Species Act provides for the conservation of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend, both through Federal action and by encouraging the establishment of State programs.

Environmental Permits and Licenses

NPDES Permits

National Pollution Discharge Elimination System (NPDES) permits are required for industrial wastewater discharges to surface waters and some stormwater discharges to surface waters not otherwise covered by NPDES general permit. An NPDES permit is required for domestic wastewater treatment facilities discharging to surface waters. Contact your local DEQ office for additional information or to apply for a permit.

Stormwater

In 1990, the EPA implemented regulations requiring permits for stormwater discharges from certain activities. The stormwater permit program requires that certain marinas classified with Standard Industrial Classification (SIC) system number 4493 be covered by a National Pollution Discharge Elimination System (NPDES) permit. Any marina or boat yard that performs boat construction or rebuilding and has a defined stormwater outfall needs a stormwater permit. Under the permit, marina operators must develop a stormwater pollution prevention plan and implement best management practices to ensure that stormwater leaving the marina property will not harm the quality of the surrounding waters. For additional information to apply for a permit, contact your local DHEC office.

Total Maximum Daily Loads (TMDLs)

The EPA requires state agencies such as the SCDHEC to calculate pollution load limits, known as TMDLs, for each pollutant entering a body of water. TMDLs describe the amount of each pollutant a waterway can receive and still not violate water quality standards. TMDLs take into account the pollution from all sources, including marinas.

Section 404

Section 404 of the Clean Water Act requires that any applicant for a permit to conduct any activity which may result in a discharge to waters of South Carolina to obtain certification from SCDHEC that the activity complies with water quality requirements and standards. Section 404 permits are issued by the Army Corps of Engineers. In South Carolina, projects in which the applicant will dredge, fill, or otherwise alter a waterway will require a permit from the SCDHEC.

Additional State Laws and Regulations

Waste and Hazardous Waste

Abrasive Blast Waste Containing Pesticides that are not federally regulated as hazardous waste are considered special waste under DHEC R. 61-107.258. The abrasive blast waste associated with hull cleaning is subject to this regulation.

Water Quality

The SC Pollution Control Act makes it unlawful for any person, directly or indirectly, to throw, drain, run, allow to seep, or otherwise discharge into the environment of the State, organic or inorganic matter, including sewage, industrial wastes, and other wastes, except as in compliance with a permit issued by SCDHEC (SC Code 48-1-90(a).

- **DHEC R.61-67, Standards for Wastewater Facility Construction** requires persons who plan to build an on-site sewage disposal system to obtain a construction-installation permit before construction.

General Permits

The SCDHEC issues a general permit for certain activities such as vehicle wash water discharges. For information, go to SCDHEC's website at http://www.scdhec.gov/eqc/water/generalpermits.

Sewage Collection

SCDHEC-OCRM R.30-12(E)(1)(b)(i)(ii) addresses the requirement that adequate working wastewater pumpout facilities be provided at each marina, unless specific exceptions are allowed in writing by the Department. These facilities must be adequate to handle all wastewater generated at the marina. The marina operator may charge a reasonable fee for the use of the pumpout facilities.

Solid Waste

Under SC Code 16-11-700(a)(2), no person can dispose of or authorize the disposal of solid waste except at a solid waste disposal site permitted or authorized by the SCDHEC to receive that waste.

Spills

Spills of reportable quantities must be reported to SCDHEC Emergency Response Section. This includes any spill of oil causing a sheen to water or threatens the waters of the state in include groundwater. There are specified spill reporting quantities for oil and hazardous materials that facilities should be aware of. Reporting may be required to both state and federal agencies. The SCDHEC Emergency Response Section number is 1-888-481-0125. This rule also requires a person to clean up spills of oil and hazardous material immediately, regardless of the quantity spilled.

Any person owning or having control over oil or hazardous material that has knowledge of a spill or release is required to immediately notify SCDHEC Emergency Response Section number is 1-888-481-0125 as soon as that person knows the spill or release is a reportable quantity.

Air Quality

SCDHEC Regulation R.61-62.2 regulates open burning. The SCDHEC Bureau of Air Quality enforces prohibitions of open burning.

SCDHEC Regulation R.61-62.6 discusses airborne or "fugitive" toxins.

Information on state and federal air permitting and reporting requirements may be found on the SCDHEC website at www.scdhec.gov/eqc/baq.

Appendix I: Boater Tip Sheets 151

These pages can be removed for copying and distribution to boaters.

Gas and Oil

One quart of oil will create an oil slick over two acres in size – the equivalent of nearly three football fields. A single gallon of fuel can contaminate over a million gallons of water. Small drips and spills of gasoline, diesel, and other petroleum products add up and can have a serious effect on the marine environment, such as: death of fish, mammals, and birds; cancer, mutations, and/or birth defects; destruction of plant life; and reduction of food supply for marine organisms.

Fuel Cautiously

- Fuel your boat slowly and carefully – attend the fuel nozzle at all times.
- Never "top off" or overfill your fuel tank. Only fill the tank to 90% since fuel expands as it warms up.
- Use your hand to check for air escaping from the vent. When the tank is nearly full, you'll feel an increase in airflow. Also listen for a gurgling sound before the tank is full.
- Use fuel bib or collar to catch drips and backsplash from fuel intake and vent overflow.
- Fill portable gas tanks on shore – where spills are less likely to occur and easier to clean up.
- Outboards: close tank fuel vent when boat is not in use to save fuel from vapor loss.
- Built-in fuel tanks: install fuel/air separator in air vent line from tank to prevent vent spills.

Fuel Bib
(courtesy of BoatUS)

Traditional two-stroke engines are inefficient and can release up to 30 percent of their gas/oil mixture unburned directly into the water. Direct injected new technology two-stroke engines consume all of their oil, resulting in no oil sheen or smoke and no dirty waste oil to change. All four-stroke and traditional two-stroke engines may emit carbon monoxide at levels 100 times higher than new technology two-stroke engines and than safe workplace standards. If these high carbon monoxide emissions are trapped, passengers may be exposed to dangerous levels.

Reduce engine pollution

- Consider replacing a conventional two-stroke outboard with a quieter, cleaner, and more efficient new technology two-stroke or a four-stroke engine.
- Use premium two-cycle engine oil and use the gas to oil ratio recommended by the engine manufacturer.
- If you have a large outboard you don't plan to replace, consider purchasing a small four-stroke "kicker" to use when trolling or moving short distances. You'll save money on fuel, save wear-and-tear on your larger motor and enjoy a cleaner environment, too.

South Carolina
CLEAN MARINA

Properly Dispose of Oil Absorbent Materials

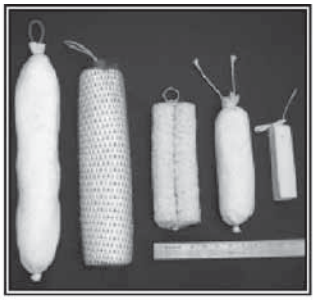
- Reuse pads that are contaminated with gasoline.
- If pad is contaminated with only diesel or oil, wring out over oil recycling bins and reuse. Or, place in one plastic bag sealed in another and discard in your regular trash.
- Bio-remediation bilge booms may be discarded in your regular trash as long as they are not dripping. Because the microbes need oxygen to function, do not seal them in plastic bags.
- Remember that materials soaked with fuel, oil, or solvents are flammable – keep away from heat.

Bilges

Bilges are also a major source of pollution since they tend to collect engine oil, fuel, antifreeze, and transmission fluid. When an automatic bilge pump is activated, these fluids are pumped overboard. Absorbent bilge pads absorb petroleum products but not water. When soaked with oil, they can be disposed of properly.

Control Oil in the Bilge

- Place oil absorbent pads or a bio-remediation bilge boom in the bilge to catch oil.
- Place an oil absorbent pad under the engine.
- Replace oil absorbent materials when heavily soiled or saturated, or at least once a year.
- Keep the engine well tuned: no leaking seals, gaskets, or hoses.
- Change oil filters often. Slip a plastic bag over filter before removal to catch drips.
- Never discharge or pump any bilge water that appears oily into or near the water – it is against the law.



Bilge Socks
(courtesy of BoatUS)

- Install a bilge pump switch that leaves an inch or two of water in the bilge. Or, connect a bilge water filter to your vessel's bilge pump. Filters will remove oil and fuel from the water.
- Trailer your boat to an area that provides containment before removing bilge or boat plugs.
- Do not use bilge cleaners when pumping to a waterbody - they simply spread out the oil and do not remove it from the bilge water.

When dispersants, such as detergents, soaps, and solvents, are put on fuel spills, fuel that might otherwise evaporate from the surface is dispersed down into the water. This rainfall effect causes contamination of all levels of the water, rather than just the surface, and is very difficult to cleanup. Left alone the gasoline will evaporate and, while smelly, by comparison is less harmful. Along with causing this dispersion effect, the detergent harms marine life.

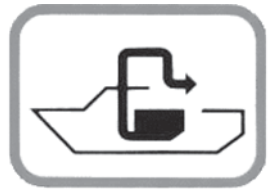
Handle spills appropriately

- If you have a spill, wipe it up with a rag – don't hose it off into the water.
- If fuel is spilled into the water:
    - Don't use soap or dish detergent to disperse it. Using detergents to disperse fuel worsens the problem and is against federal law.
    - Call 1-800-OILS-911 for both large and small spills.
- If a spill occurs in a marina, notify the marina management immediately.

Sewage Disposal

When sewage is pumped or dumped directly into the water, there is a potential for disease-carrying microorganisms to be released into that water. These microorganisms can cause human diseases such as gastroenteritis, hepatitis, typhoid, cholera, and dysentery. In addition, as bacteria and other microorganisms decay the sewage, they use up oxygen that fish and other marine life need to breathe. Discharge of vessel sewage is especially harmful due to its high concentration of sewage and the presence of chemical additives – such as formaldehyde, para-formaldehyde, quaternary ammonium chloride and zinc sulphate – which are toxic to marine life.

Don't Dump Overboard!



Look for the Pumpout Sign

- Know your marine sanitation device (MSD) type and manage it appropriately.
- Type III MSDs are the most common MSDs on recreational vessels and include recirculating and incinerating MSDs and holding tanks. It is illegal to discharge sewage from a Type III MSD overboard into coastal waters, lakes, or reservoirs. Use pumpout facilities for Type III MSDs.
- Type I and II MSDs treat the sewage and must not be discharged while in moorage or on lakes or reservoirs.
- Empty portable toilets at dump stations or at home. Discharge of this untreated sewage overboard to coastal waters or into a lake or reservoir is illegal.
- If boat has a holding tank with a y-valve and through-hull fitting, keep them locked closed when inside coastal waters or on lakes or reservoirs.
- See "A Guide to Marine Sewage Disposal Stations in Coastal South Carolina, available from OCRM for pumpout and dump station locations.

Handle Sewage Appropriately

- Use restrooms on shore whenever possible.
- Establish a regular maintenance schedule for your MSD based on manufacturer's recommendations.
- Avoid using additives like quaternary ammonium compounds (QAC) or formaldehyde in your holding tank. Use safer enzyme-based products to control odor and reduce solids.
- Consider installing a filtered air holding tank.
- Keep diapers, sanitary napkins, oils, solvents, and other harmful chemicals out of toilets.
- If using pumpout equipment, wash your hands with antibacterial soap after use.
- Dispose of your pet's waste properly.

South Carolina
CLEAN MARINA

Gray Water

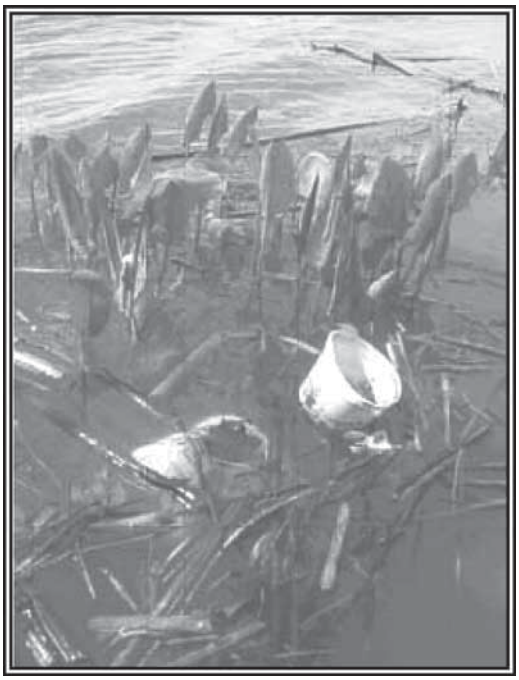
- Water from sinks, washers, and showers are discharged directly into the water without treatment. This gray water is often rich in phosphates that pollute the water and encourage the growth of unwanted algae.
- Use upland laundry facilities and showers whenever possible.
- Limit the amount of water you use in sinks and showers.
- Use non-phosphate soaps.

Garbage

Trash – plastic bags, Styrofoam, bottles, cans, discarded nets, fishing line, and other refuse – can injure or kill aquatic life and birds by trapping or suffocating them. Along with being unsightly, trash can also foul props, clog water intake fittings, and damage fishing nets.

Contain Trash: Nothing overboard!

- Bring a container aboard to collect your garbage and keep it from blowing overboard.
- Minimize the use of plastic wrap and bags when packing for your trip.
- Don't toss any garbage or cigarettes overboard; cigarette filters are plastic and deadly to birds and fish.
- If trash blows overboard, retrieve it – consider it "crew-overboard" practice.
- Teach everyone on board that tossing anything into the water is just not done.
- Pick up other trash in the water or along the shore if you can reach it safely.
- Recycle cans, glass, plastic, and newspapers.
- Bring used monofilament fishing line to recycling bins at your marina or tackle shop.
- Encourage your marina to provide well-marked trashcans and recycling bins.



South Carolina CLEAN MARINA

Boat Cleaning

Many products used to clean boats contain toxic chemicals such as chlorine, phosphates, and ammonia. These products can enter the water during boat cleaning and can poison marine life. Degreasers dry the natural oils fish need for their gills to take in oxygen. The best way to keep toxic chemicals out of the water is to not use them at all. In many cases, "elbow grease" will go a long way.

Clean Gently

- When possible, wash the boat on land where the wash water can be contained or filtered.
- Wash your boat frequently with sponge and plain water.
- Use detergents sparingly.
- Avoid cleaners with bleach, ammonia, lye, or petroleum distillates.
- Use phosphate-free, biodegradable and non-toxic cleaners, such as those in table. Though much less harmful, these cleaners can still cause damage to local marine life and should be used only on land when possible.
- If your boat does not have sloughing paint on it, wash over grass or soil with an environmentally friendly detergent.
- Wax your boat – a good coat of wax prevents surface dirt from becoming ingrained.
- Clean wood with a mild soap powder and a nylon brush – not harsh chemical cleaners.
- Ask your ship's store to stock common alternative products listed in the table and biodegradable spray-type cleaners that do not require rinsing.

Toxic Water
(Courtesy of Surfrider)

South Carolina CLEAN MARINA

Non-toxic Cleaning Alternatives

Toxic Product	Alternative
All Purpose Cleaner	Mix one cup white vinegar with two gallons water.
Air Freshener	Leave out an open box of baking soda.
Aluminum Cleaner	2 Tablespoons cream of tartar in 1 quart hot water.
Ammonia-Based Cleaners	Vinegar, salt, and water.
Bleach	Borax or hydrogen peroxide
Brass Cleaner	Worcestershire sauce. Or paste made of equal parts of salt, vinegar, and water.
Chrome Cleaner/Polish	Apple cider vinegar to clean; baby oil to polish.
Copper Cleaner	Lemon juice and water. Or paste of lemon juice, salt, and flour.
Drain Opener	Disassemble and replace or use plumber's snake. Or flush with boiling water, plus ¼ cup baking soda, plus ¼ cup vinegar.
Fiberglass Stain Remover	Baking soda paste.
Floor Cleaner	One cup white vinegar in 2 gallons water
General Cleaner	Baking soda and vinegar. Or lemon juice combined with borax paste.
Hand Cleaner	Baby oil or margarine.
Head Cleaner	Put in baking soda and use a brush.
Mildew Remover	Paste using equal parts of lemon juice and salt or white vinegar and salt
Rug/Upholstery Cleaner	Sprinkle on dry cornstarch and then vacuum.
Scouring Powders	Baking soda or salt. Or rub area with one-half of a lemon dipped in borax, then rinse.
Shower Cleaner	Wet surface, sprinkle with baking soda, rub with scouring cloth.
Stainless Steel Cleaner	Baking soda or mineral oil for polishing, vinegar to remove spots.
Toilet Bowl Cleaner	Use toilet brush and baking soda.
Varnish Cleaner	Wipe with ½ cup vinegar and ½ cup water solution
Window Cleaner	Mix two tablespoons vinegar in one quart of water or rub glass with newspaper.
Wood Polish	3 parts olive oil and 1 part white vinegar (for interior unvarnished wood only).

Vessel Maintenance

General upkeep of boats generates household hazardous wastes such as solvent paint waste, used antifreeze, used oil, old gasoline, used batteries, mercury containing bilge pump switches, and out-of-date flares. These wastes pose a threat to the environment if they are improperly disposed into the water, air, or ground.

Manage your Hazardous Waste

- Use less-toxic propylene glycol antifreeze (usually pink).
- Use premium two-cycle engine oil.
- Share any leftover chemicals, paint, or varnish.
- Recycle used motor oil, antifreeze, and other engine fluids. Prior to recycling, store in separate closed containers to prevent escape, mixing, or fire hazard.
- Bring items to a local hazardous waste collection day or facility.
  Visit http://www.scdhec.gov/recycle for local recycling centers
- Encourage your marina to offer oil recycling.
- Trade in a used battery for a possible credit toward a replacement battery.
- If out-of-date flares have not been exposed to water and are undamaged, keep them on the boat along with the number of required in-date flares.
- When possible, use paints that are not solvent based.
- Buy bilge pump switches that do not contain mercury. Check with marina on mercury containing bilge switch disposal.

Recycle

Oil	Aluminum	Solvents
Antifreeze	Cardboard	Steel
Lead batteries	Metal fuel filter canisters	Scrap Metal
Glass	Mixed Paper	Tin
Plastic	Newspaper	Tires

South Carolina
CLEAN MARINA

Hull Paint

Anti-foulant coatings on boat hulls are another toxic threat to marine life. These coatings contain compounds such as copper that kill marine organisms that grow on the underside of a boat. These coatings, especially ablative (a.k.a. soft, self-polishing, or sloughing) coatings, also release toxic compounds into the water. Hard antifouling coatings have extended antifouling properties, but limit the amount of toxic metals leached into the water. Hard coatings also release less material into the water when they are cleaned.

Maintain your Hull Wisely

- Consider alternatives to toxic sloughing bottom paints.
  - Some good alternatives are silicon, polyurethane, Teflon, and other hard antifouling coatings.
  - These alternatives rely on a slick surface to discourage the growth of marine organisms rather than killing them.
- If boat has a sloughing paint coat, do not clean the boat bottom while in the water – this creates a discharge of toxic paint chips in the water. Only clean running gear and anodes.
- Clean boat bottoms ashore over hard surfaces or a tarp, where all debris can be contained.
- Wait 90 days to clean a newly painted hull, as it will release more toxins when new.
- Consider storing your boat out of the water to prevent fouling.
- Do hull work inside or under cover where rain can't wash dirt, dust, oil, or solvents into the water.
- Use a dust-less or vacuum sander, or a drop cloth to collect all paint chips, dust, and residue. Dispose in regular trash.

South Carolina
CLEAN MARINA

Fish Bait/Waste

In small quantities, crabs and other marine animals scavenge fish waste. However, in an enclosed marina basin decomposition of excessive fish waste can produce foul odors and impair water quality through increased nutrient and bacteria levels and decreased dissolved oxygen. This can cause fish kills as well as an unsightly mess.

Dispose of Fish Waste Properly

- Do not throw fish waste, unwanted bait, or bait packaging into marina waters.
- Discard fish waste over deep water or in the trash.
- If available, use fish cleaning stations.
- Recycle fish parts by composting with peat moss or burying in the garden as fertilizer. Or freeze fish waste and reuse as chum or bait.

Fish Cleaning Station

Underway

Boat traffic (including personal watercraft) through shallow-water areas and in the nearshore areas at wake-producing speeds can stir up bottom sediment, uproot submerged aquatic vegetation, erode shorelines, and harm some animals. Disturbed sediment can cause darker waters which harm aquatic plant life and bottom-dwelling organisms, reduce dissolved oxygen levels, and disrupt fish feeding. The loss of underwater plants reduces available habitat for fish, shellfish, and waterfowl, diminishes the recycling of nutrients, and decreases natural shoreline erosion protection.

(Courtesy of S.C. DNR)

Protect Sensitive Habitat

- Always be aware of your wake. Distribute your passengers equally. A heavy stern creates a larger wake.
- Observe posted No-Wake Zones.
- Operate away from shore as much as possible to avoid disturbing wildlife, chopping vegetation, and disturbing bottom sediments.
- Proceed slowly in shallow areas.
- Do not disturb wildlife.

South Carolina CLEAN MARINA

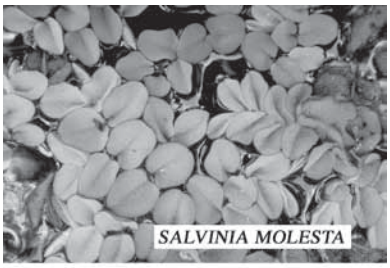
Aquatic Nuisance Species

Exotic plants and animals such as the zebra mussel, hydrilla, and salvinia can hitch a ride attached to your boat or trailer or as tiny young present in water taken in by your boat. Hitching from one waterbody to another, these aquatic nuisance species spread quickly and can become established in another waterbody. They contribute to the degradation of water quality and fish and wildlife habitat by displacing native species and by blocking light needed by submerged aquatic plants. Once introduced, control of aquatic nuisance species is very expensive and extermination is extremely difficult.

Stop the Spread of Aquatic Nuisance Species

- Never release live or dead bait or bait packaging into a waterbody, or release aquatic animals from one waterbody into another.
- Share live bait with other anglers or empty your bait bucket in the trash before leaving the area.
- Inspect your boat and trailer, especially at the points in the diagram. Remove any plants and animals you see before leaving the waterbody.
- Avoid chopping vegetation with outboard motor propellers.
- When hauling your boat, drain your motor, wet well, and bilge in a containment area on shore.
- Rinse your boat, trailer, and equipment. It is best to use high-pressure, hot water. A garden hose will work if no other option is available.
- Be especially careful if you've been boating in an infested lake, or if you're buying or using a boat that has come from out of state. Flush raw water-cooling systems and clean sea strainers.
- Air-dry your boat and equipment for as long as possible – at least five days is optimal.
- If you find one of the below species, or suspect there may be a new infestation, go to http://www.protectyourwaters.net/sc.

Hydrilla
(Photo courtesy of SC DNR)



Salvinia Molesta
(Photo courtesy of SC DNR)

South Carolina
CLEAN MARINA

Fishing Line Recycling

Monofilament fishing line – the plastic fishing line popular with anglers for its strength and invisibility under water can become a danger when it makes its way into the environment. It can get into our waterways by breaking while fishing, but most often it is carelessly tossed into the water or on land. Monofilament is a particularly troubling form of marine debris because it is not biodegradable and can last hundreds of years in the environment. Becoming entangled is a common problem for many marine animals, but there are other threats as well. Birds, sea turtles, and marine mammals like dolphins and manatees are known to mistake line for prey, or inadvertently ingest it along with their normal food. Even humans cannot escape the dangers of rogue monofilament. Swimmers and SCUBA divers can become entangled as easily as marine animals. Line can also be wrapped around boat propellers, causing a dangerous and expensive problem.

Fortunately, there are steps you can take to keep fishing line from becoming a threat.

Recycle Your Line

- Monofilament line can be recycled to make new plastic products like tackle boxes and artificial fish habitat structures.
- Monofilament recycling bins work much like household recycling bins. They are white, PVC structures found at many boat landings, marinas, fishing piers, or other popular fishing spots. Simply place used monofilament fishing line (and nothing else) into the bins.
- If you cannot find a monofilament recycling location near you and must throw your line away, cut it into 6 inch pieces first. Once in the landfill, this reduces the risk of entanglement by birds and other animals.

Adopt a Monofilament Recycling Bin

- The SC Monofilament Recovery and Recycling Program (SC-MRRP) offers an opportunity not only to recycle your used line, but also to adopt a recycling bin.
- Each bin is adopted and maintained by a volunteer, group, or entity.
- Once the bin is installed, the volunteers check it periodically, collect fishing line, and fill out an information sheet about how much line is collected.
- The line is shipped using a pre-paid shipping box to Berkley© for recycling.
- If you have a location in mind for a recycling bin or want to adopt a bin, contact the program at: sc-mrrp@dnr.sc.gov or 843-953-6666
- For more information, check out the program at: http://saltwaterfishing.sc.gov/monofilament.html

Select References

Connecticut Department of Environmental Protection. 2002. *Connecticut Clean Marina Guidebook*. Hartford, CT: Connecticut Department of Environmental Protection.

Department of Environmental Quality. Various Fact Sheets available 7/13/05 at: http://www.deq.state.or.us/pubs/factsheets.asp#WQFS.

Department of Environmental Quality and Oregon State Marine Board. 1996. *Guidelines for Sewage Collection and Disposal for Recreational Boats, Commercial Vessels and Floating Structures*. Salem, OR: Oregon State Marine Board. Available 7/13/05 at: http://www.boatoregon.com/PDF-Reports/liveaboard.pdf.

Florida Department of Environmental Protection. 2003. *Florida's Clean Marina Program: Working Together for the Future of Clean Water*. Tallahassee, FL: Florida Department of Environmental Protection.

Kretzschmar, R. 2002. *Best Management Practices for Oregon Marinas*. Oregon: Oregon Department of Environmental Quality.

Maryland Department of Natural Resources. 1998. *Maryland Clean Marina Guidebook*. Annapolis, MD: Maryland Department of Natural Resources.

National Oceanic and Atmospheric Administration (NOAA). 2003. *Clean Marina Initiative*. Viewed 5/21/05 at: http://cleanmarinas.noaa.gov.

Oregon State Marine Board. 2005. *Oregon Clean Marina Guidebook.* Salem, OR.

SCDHEC Bureau of Water (SCDHEC-BOW). 2005. *2005 Shellfish Growing Area Status Report.* Viewed 12/06/06 at: http://www.scdhec.gov/eqc/water/pubs/sftrend.pdf.

South Slough National Estuarine Research Reserve (NERR). 2002. *Non-point Source Pollution and Pacific Northwest Estuaries*. Charleston, OR: South Slough National Estuarine Research Reserve.

United States Commission on Ocean Policy (USCOP). 2004. *An Ocean Blueprint for the 21st Century: Final Report of the U.S. Commission on Ocean Policy.* Washington, D.C.: USCOP.

United States Environmental Protection Agency (EPA). 1993. *Guidance Specifying Management Measures for Sources of Non-point Pollution in Coastal Waters.* Washington, DC: EPA-840-B-92-002. Viewed 3/17/05 at: http://www.epa.gov/owow/nps/mmgi/.

United States Environmental Protection Agency (EPA). 1996. *Clean Marinas, Clear Value: Environmental and Business Success Stories*. Washington, DC: EPA-841-R-96-003. Viewed 3/6/05 at: http://www.epa.gov/owow/nps/marinas/.

United States Environmental Protection Agency (EPA). 2001. *National Management Measures Guidance to Control Non-point Source Pollution from Marinas and Recreational Boating.* Washington, DC: EPA-841-B-01-005.

United States Environmental Protection Agency (EPA). 2002. *National Water Quality Inventory: 2000 Report.* Viewed 5/8/05 at: http://www.epa.gov/305b/2000report/.

United States Environmental Protection Agency (EPA). 2005. *The National Coastal Condition Report II.* Viewed 5/8/05 at: http://www.epa.gov/owow/oceans/nccr/2005/downloads.html.

Van Dolah, R.F., P.C. Jutte, G.H.M. Riekerk, M.V. Levisen, S.E. Crowe, J.J. Lewitus, D.E. Chestnut, W.McDermott, D. Bearden and M. H. Fulton. 2004. The Condition of South Carolina's Estuarine and Coastal Habitats During 2001-2002: Technical Report. Charleston, SC: South Carolina Marine Resources Division. Technical Report No. 100. 70p.

Contacts For More Information

Air Quality	S.C. DHEC	(803) 898-4123
Clean Marina Program	SCMA	(843) 889-9067
Clean Vessel Act Grants	S.C. DNR	(843) 953-9062
Dredge, Fill, & Underwater Construction	S.C. DHEC-OCRM US Army Corps of Engineers	(843) 747-4323 (866) 329-8187
Fish and Wildlife & Endangered Species Act	U.S. Fish and Wildlife Service	http://www.fws.gov or 803-734-3886
Hazardous Waste	S.C. DHEC Hazardous Waste Compliance and Enforcement Division S.C. DHEC Hazardous Waste Website Spill Prevention, Control, and Countermeasure (SPCC) Plans Emergency Planning and Community Right-to-Know Act (EPCRA)	(803) 896-4136 http://www.scdhec.gov/lwm http://www.scdhec.gov/lwm/html/haz http://www.epa.gov/oilspill/spcc.htm http://www.epa.gov/ceppo/
Landscaping	Clemson University Extension	www.clemson.edu/extension (843) 772-5940
Land Use Planning & Coastal Resource Management	S.C. DHEC-OCRM	http://www.scdhec.gov/environment/ocrm (843) 953-0200
Litter and Beautification	Palmetto Pride	www.palmettopride.org (803) 758-6034
Recreational Boating Info	S.C. DNR	(803) 734-3857
Solid Waste (Trash and recycling)	EQC Office of Solid Waste Reduction and Recycling	http://www.scdhec.gov/lwm/html/solid.html (800) 768-7348
Spill Reporting	South Carolina Emergency Response System National Response Center	(888) 481-0125 (800) 424-8802
Stormwater Discharge Permits	S.C. DHEC OCRM Website EQC-Bureau of Water Website	www.scdhec.gov/environment/water/swerfmain.htm www.scdhec.gov/environment/ocrm/permit.stormwater.htm http://www.scdhec.gov/eqc/water/

Total Maximum Daily Loads	Department of Health and Environmental Control	http://www.scdhec.gov/eqc/water/html/npdespage.html
Underground Storage Tanks	Department of Health and Environmental Control	(803) 896-6241 http://www.scdhec.gov/ust
Voluntary Programs & Cleanups	SCDHEC-OCRM	(843) 953-0205 or www.scdhec.gov/environment/ocrm/adopt-a-beach

Glossary of Terms

Ballast Water - Water placed in the hold of a boat or ship to maintain stability.

Black Water - Water-carried human wastes, including feces, urine, and other extraneous substances of bodily origin (including toilet paper).

Boathouse - A covered floating structure primarily used for wet or dry storage of a boat.

Boat Waste Collection Device - All types of stationary, portable, or mobile equipment that collects and transfers black water from boats. Includes boat pumpout and dump stations.

Dump Station - A device that receives sewage from a portable toilet.

Dwelling - A structure, boat, or vessel that has sleeping, cooking, and plumbing fixtures used for human occupancy or are used for residential purposes.

Fugitive Emissions - Dust, fumes, gases, mist, odorous matter, vapors, or any combination thereof not easily given to measurement, collection, and treatment by conventional pollution control methods.

Gray Water - Any water carried waste other than black water, including kitchen and laundry waste.

Hydroblasting - Use of pressurized water to remove paint or oxidized metal.

Houseboat - A self-propelled boat designed for use as a temporary dwelling. Any houseboat moored in one location and used as a dwelling for more than ten of any 30-day period is classified as a "live-a-board."

Live-a-board - A boat moored in one location and used as a dwelling for more than ten of any 30-day period.

Marine Sanitation Device (MSD) - A U.S. Coast Guard approved type I, II, or III device used to treat or retain in a holding tank all boat toilet fixture waste generated from a boat or vessel.

Moored - Secured or tied-up to a dock, pile, float, buoy, or at anchor.

Operating - Underway; not moored.

Owners - Includes but not limited to individuals, corporations, entities, operators, renters, or other responsible person in control or having control of real or personal property.

Petroleum – SC Code 44-2-20(17)(b), the term "regulated substance" includes, but is not limited to petroleum and petroleum based substances comprised of a complex blend of hydrocarbons derived from crude oil through processes of separation, conversion, upgrading, and finishing, such as motor fuels, jet fuels, distillate fuel oils, residual fuel oils, lubricants, petroleum solvents, and used oils.

Plumbing Fixture - Includes but not limited to toilets, showers, lavatories, and laundry fixtures.

Pressure Washing - Use of a water pressure washer to remove dirt or biological growth from a vessel's hull. Pressure washing includes the practice of hand scrubbing and rinsing with low-pressure water from a hose. Pressure washing that removes paint is hydroblasting.

Portable Toilet - Includes all types of portable toilets and hand-carried potties used to collect black water.

Pumpout - A stationary or portable pumping or suction device that removes waste from a boat holding tank and transfers it to an approved municipal, septic, on-site sewage treatment system, or land side holding tank for disposal.

Sewage - Black water and/or gray water waste.

Solid Waste – means any garbage, refuse, or sludge from a waste treatment facility, water supply plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. This term does not include solid or dissolved material in domestic sewage, recovered materials, or solid or dissolved in irrigation returns flows or industrial discharges which are point sources subject to NPDES permits under the Federal Water Pollution Control Act, as amended, or the Pollution Control Act of South Carolina, as amended, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended. Also excluded from this definition are application of fertilizer and animal manure during normal agricultural operations or refuse as defined and regulated pursuant to the South Carolina Mining Act, included processed mineral waste, which will not have a significant adverse impact on the environment.

Stormwater - Stormwater runoff, snowmelt runoff, surface runoff, road wash water related to road cleaning or maintenance, infiltration (other than infiltration contaminated from sanitary sewers or other discharges) and drainage.

Structure - Includes but not limited to boathouses, combos, and floating homes used as dwellings.

Total Maximum Daily Load (TMDL) - The amount of a single pollutant (such as bacteria, nutrients, metals) that can enter a waterbody on daily basis and still meet water quality standards set forth by the State.

Waters of the State - Includes lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial limits of the State, and all other bodies of surface or underground water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially within or bordering the State or within its jurisdiction (SC Code 48-1-10(2).

Index

South Carolina
CLEAN MARINA

D H E C

PROMOTE PROTECT PROSPER

Ocean and Coastal
Resource Management

Total costs: $
Total Printed:
Unit Costs: $

1/2011 CR-006968 Revised 10/2010